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BACILLUS ICTEROIDES AND *BACILLUS CHOLERÆ SUI*.—A PRELIMINARY NOTE.

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IN the course of a comparative study of bacillus α (Sternberg) and bacillus icteroïdes (Sanarelli) which has engaged our attention as opportunity would permit during the past eighteen months, we have had occasion to observe the effect produced by the intravenous injection in dogs of other micro-organisms, such as the bacillus coli communis and the bacillus cholerae suis. Without entering into details in this preliminary note we may state that the same clinical symptoms, *vis.*, vomiting, increased action of the bowels, and profound prostration, which are produced in dogs by the intravenous injection of B. icteroïdes, are also brought about by a like inoculation of the hog-cholera bacillus. When death occurs, the stomach contains a considerable quantity of fluid blood and extensive hemorrhagic lesions are present in the small intestine. We have not found fatty degeneration of the liver, since our dogs, few in number, injected with the hog-cholera bacillus, have died too early for this change to occur. We have also failed to discover any fatty degeneration in the liver of dogs that have died within a few days after the intravenous injection of B. icteroïdes. This change has only been met with in two instances, when the animals had survived until the ninth day after inoculation with B. icteroïdes. In neither of these cases, however, was the degree of fatty degeneration at all comparable with that present in the human liver in yellow fever.

In addition to the experiments upon dogs, we have compared the course of the infection and the lesions produced in guinea-pigs and rabbits inoculated with small quantities of B. icteroïdes and B. cholerae suis, and have been much impressed with the similarity of the results obtained. The same cyclical course of the infection described by Sanarelli for guinea-pigs inoculated with B. icteroïdes is seen in these animals when injected with like quantities of B. cholerae suis. The greater susceptibility and shorter course of the infection in rabbits applies equally to

both micro-organisms. Theobald Smith has called attention to the extreme susceptibility of these animals to inoculation with minute quantities of the hog-cholera bacillus.¹ We have succeeded in killing rabbits with 100,000 c.c. B. icteroïdes injected subcutaneously. The lesions produced in rabbits and guinea-pigs inoculated with B. icteroïdes and the hog-cholera bacillus are practically the same, the most constant change consisting of multiple necroses in the liver. Sanarelli does not appear to have made any mention of this most striking lesion. We have found these punctate necroses of the liver especially prominent in guinea-pigs that have survived the inoculation more than five days.

Observations have shown that pigeons are not very susceptible to inoculation with the hog-cholera bacillus. We have also found these birds to be tolerably resistant to infection with B. icteroïdes. A fatal result has been produced by injecting 3 c.c. of a bouillon-culture into the breast muscle. Hemorrhage, swelling and extensive necrosis of the muscle are present, under these circumstances, as has been described by Welch and Clement, for the hog-cholera bacillus.²

We desire also to record in this preliminary note that bacillus icteroïdes, when fed to young hogs, produces an acute infection which may be followed by a fatal result, and that the chief lesion is confined to the large intestine. This lesion consists of an inflammation of the mucous membrane accompanied by fibrinous exudate, together with numerous small and large superficial ulcerations affecting the colon and cecum. These ulcerated areas are covered by an abundant, thick, bile-stained exudate. The "cork-lining" appearance mentioned by Smith would apply to the description of the intestinal mucosa. A portion of the viscera of a young hog that had been fed with 25 c.c. of a 24-hour bouillon-culture of Sanarelli's bacillus and which had died on the sixth day of the disease was fed to a second animal. The latter after exhibiting symptoms of sickness, such as fever, shiverings and loss of appetite, for a few days appeared to have fully recovered from the inoculation. It was killed on the 18th day. At autopsy numerous ulcers in various stages of cicatrization were found in the large intestine.

¹ Bulletin No. 6, U. S. Department of Agriculture, 1894.

² "Hog Cholera and Swine Plague," Welch and Clement, 1894.

As regards the morphologic and biologic character of *B. icteroides* and *B. cholerae suis* we have been unable to observe differences other than may be met with in varieties of the same species. Both are small, quite active, motile, non-liquefying bacilli whose slow rate of growth is the same in bouillon and in gelatin; likewise on agar, potato, and in litmus milk the growth presents the same appearances. Milk is not coagulated by either of these bacilli.

The action of *B. icteroides* and *B. cholerae suis* upon the three sugars has been the same in our hands. Both ferment glucose. If the bouillon is free from muscle glucose no fermentation takes place in lactose or saccharose bouillon. Exceptionally we have recorded a very slight fermentation of saccharose with both organisms. Both of these bacilli, when cultivated in Dunham's solution, give a faint indol reaction.

We desire further to record the marked agglutinative reaction exhibited toward the hog-cholera bacillus by the serum of an animal immunized with *B. icteroides*. As long ago as May, 1898, we had observed that the blood-serum of a dog which was being immunized with *B. icteroides* would in dilutions of 1 to 5000 promptly arrest motility and agglutinate the hog-cholera bacillus. After testing various dilutions of this serum from 1 to 100 to 1 to 5000 we could observe no difference in its agglutinative reaction upon *B. icteroides* and *B. cholerae suis*. We have recently obtained, through the kindness of Surgeon General Sternberg, a specimen of *icteroides* serum, which, in dilutions of 1 to 120,000, promptly arrests the motility and agglutinates bacillus *icteroides*. In the same dilution this serum immediately arrests the motility of the hog-cholera bacillus, but does not bring about agglutination of the bacilli until at the end of about three hours. In a dilution of 1 to 30,000 agglutination commences within ten minutes and is complete at the end of one hour. The groups of bacilli are smaller than occurs with *B. icteroides*.

In rejecting *B. icteroides* as the specific cause of yellow fever Novy emphasizes the extreme resistance of this bacillus to low temperatures¹. We have found Sanarelli's bacillus to preserve its vitality and virulency after twenty days continuous freezing at 10° C. (14° F.). That the hog-cholera bacillus is also quite resistant to low temperatures has been proven by the observations of Smith, and by the fact of its survival, notwithstanding the extreme severity of winter in our Northwestern States.

Putting together, therefore, the remarkable cultural resemblances of these two bacilli, and the

similarity of their pathogenic action as shown in guinea-pigs, rabbits, pigeons, dogs, and hogs, we venture to express the opinion that the bacillus *icteroides* (Sanarelli) is a variety of the hog-cholera bacillus, and that it should be considered only as a secondary invader in yellow fever. We find that the bacillus *x* (Sternberg) presents marked differences from the foregoing micro-organisms, both as regards its biologic character as well as its pathogenic action toward animals. Reserving for future publication a more detailed description of our observations, it will suffice to here state our opinion that bacillus *x* should be placed with the colon group.

CARDIAPHOBIA, OR HEART FEAR.

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THE title of this paper is meant to include all cardiaphobias (heart fears, cardiac dreads, and heart frights) that are associated with so-called functional derangements of the heart. In attempting to establish a classification it will be necessary to separate the cardiaphobias into three principal groups, *vis.*: First, those in which the fear elements appear as preliminary to the functional derangements, and are, therefore, to be regarded as results of psychic action. Second, those in which the fear elements succeed upon the cardiac symptoms, and are secondary without preliminary ideation. Third, those in which the psychic elements act in conjunction with the cardiac disorders, producing a mixed condition, and are not in themselves primal.

Much valuable data has been contributed upon the general topic of fear, but the discussions of the fear element as exemplified and modified in disordered conditions of the body have been meager and unsatisfactory. Two centuries ago Descartes claimed that anything originally harmful to the body or closely associated with it would produce a similar passion or emotion upon successive generations, and prompt them to flight or efforts at escape. "There also comes," he says, "into the blood and the impulse imparted to it, a message that increases the passion of fear." Giovanni Lancisi, the celebrated Court physician of Italy, places mental functions in close dependence upon the heart nerves, ganglia, and coronary vessels.² There is a disposition upon the part of recent authors to regard the fear element as largely the product of somatic life, rather than the ideational centers. Some, however, place fear among the purely psychical phe-

¹"The Etiology of Yellow Fever," MEDICAL NEWS, p. 368, September 17, 1898.

nomena. Its connection with cell actions, whether of the mind organ, the nerves, or the bodily life, must each influence the living organism and modify metabolic activity. Many have maintained, and still do maintain, that fear is a morbid entity, no matter how produced or expressed. Brown-Séquard once thought that all fears were due to abnormal conditions, and that he could inoculate with the bacilli of fear.¹ Fear is a universal possession, and is essential to every creature, brute or human.

Diseases divested of fears are bereft of one of the most benignant influences, and one that tends to the preservation of life and the promotion of cure. This is negatively evidenced by the fearless lethargy that consumes the victim of phthisis. Like rudimentary or vestigial organs, some fears have fulfilled their mission and become degenerate and useless. The dread of death, and especially from heart disease, is on the increase. We do not know how much of this belongs to the traces of remote experience, or whether hereditary root is demonstrable at all; but scientific research proves conclusively that some of the oldest traces are among the strongest in the fear manifestations of the present time.

In searching for the cause of this fear element in functional heart derangements, we must remember that the structure of the heart has an extremely abundant nervous supply, both intrinsic and extrinsic. From the earliest period of conception the heart is the first organ to develop, and long before the brain or mind has any dominating influence, it controls the bodily supplies, and is indeed the citadel of life. About one month after conception the human heart has very nearly the form which it preserves through life. The fully developed heart is composed of interlacing bundles of striated involuntary muscular fibers, devoid of any sarcolemma, and from the protoplasmic beginning maintains the habit of contractility.

The complicated innervation of the heart includes nearly 400 nerve ganglia, which are as so many little brains or sentinels on the watch for any cause for alarm. If one is injured the others feel its loss, for it still retains the capacity of giving out impressions, which, because of the injury, may frequently be wrong; later, if the process of deterioration is progressive, it habitually gives out wrong interpretations, and ultimately it degenerates into ganglionic insanity. This again may extend from one to another like a contagion, until a community of ganglia is rendered liable to hallucinations and delusions. These ganglia are reinforced by the cardiac plexuses and myriads of nerves distributed to every fiber of its structure. With these intrinsic nerve elements it could conduct, and does continue its

contractions and dilatations even when severed from communication with the nerve centers. It often displays the ideo-motor capacity when all communication with the brain or cord are well preserved and normal. Some of the acts of the heart under stress are as independent as if it were invested with intelligence.

The many channels that connect the heart with the centers in the cord and brain and convey the inhibitory, accelerator, and sympathetic impulses, while augmenting the possibilities for utility, greatly increase the probabilities for varied phenomena, shading from the normal to embarrassing abnormalities. The center of the cardiac nerves is the medulla, and here all the paths of the nervous system converge. This multiplicity of origins of the nerve-supply of the heart has been recognized as products of the higher evolutionary processes, and are supposed by Mosso and others to constitute means by which the fear element may be established and maintained.

Again, it is to be remembered that fears do not always express themselves immediately upon the reception of the impression. The aptitude of the nerve-cell to accumulate and preserve external impressions is one of the most important physiologic facts. This capacity is supposed to reside more appropriately in the brain, but such capacity cannot be denied other nerve-cells throughout the body, and especially would it be reasonable to expect it of the highly organized ganglia, plexuses, and nerves of the heart. There is in each organ an unconscious vigilance that will protect, even in the absence of the ideational centers, and when the organ is perfectly adjusted to its needs this inherent capacity is more certain.

As a causative agent in cardiaphobia, age bears some relations that must not be disregarded. As age increases many influences that favor fear outbursts decline, and others increase. There must be a more or less puerile character to all fears that remain throughout life. Some seem to advance in everything but the elevation of their fears which perturb the heart and mind. There is also a point at which the adult heart and mind in their fears, like other capabilities of the body, are decadent. There are periods in which the heart muscle is subject to the greatest expenditure of force in its growth and development, as at puberty, and the fear element is by nature withheld; but, if by abnormal activity it is forced to the front the manifestations are peculiarly distressing. Again, the young are apt to fear death for themselves, the old for others.

Women respond more readily and vigorously for

a time to the fear element exercised upon the circulatory apparatus than men; therefore, it is assumed that women have more tender hearts than men. The female organization is more conservative of archaic influences than the male. An additional strain is placed upon women throughout life, and the periods often touch each other that should demand earnest solicitude and utmost care in observing the demonstrations as occasioned by the fear element: puberty, pregnancy, childbirth, and the climacteric. A self-regarding disposition of mind fosters the fear element. Males are more commonly involved than females in this respect. These cases appear at the most active and most wearying, as well as the most important period of life, from thirty to fifty years. The strain of this period is the greatest mentally, physically, and, to some, sexually.

The age in which we live has its causative influence. There is to-day a greater demand than ever made upon all for the fulfilment of personal tasks, and larger ordinary requirements upon the heart force and nervous system to accord with the pace set for the present generation. There is a growing sentiency in the people⁴ so that we feel more than ever, consequently the possibilities of fear are more exalted. Cardiaphobias are, in some individuals, little more than sentient crises. In the highly nervous state there is added cause for sentiency, and the subject listens intently to the heart's frettings with every breath bated, thus adding, however unintentionally, a most potent factor to cardiaphobia and mental unrest. Some cardiaphobiacs are resonators of sensation. The heart engages the most perfect attention during the stillness of the night when the vividness of its impression is augmented by the absence of distracting influences.

It cannot be denied that the etiology of some of the cardiaphobias lies in the hypersensitive condition of the nerves or nerve centers; but, nevertheless, their primal awakening may be in the heart malbehavior which preceded, rather than followed, the nervous irritation. This intermingling of effects must not be overlooked.

For the production of certain characteristics of fear in heart perturbation, there is no need for the participation of will or consciousness.⁵ All that is most characteristic in the phenomena attending cardiaphobia is due to automatism. Will is restricted, and involuntary movements dominate these fears. It is not the serious that the heart appreciates to excess—as for instance, long continued heart lesion—but the unexpected explosion of emotions occasions intense perturbations. The first moments are the most energetic in their response, as is true of all phenomena in the nervous system. Some reduction

of nervous tone brought about by the habits of life will render the subject liable to heart fear. Overwork, worry, mental strain, and psychic processes generally may mingle and contribute as causative in the nervous depressions or exaltations preliminary in the expression of fear. Faulty central impressions may be received upon the heart directly without previous unwholesome condition or malbehavior of the organ, and the psychic expressions find outlet in organic functional malbehavior.

If the heart received no sudden shocks from fear and was not made capable of them, the influences entering the ideational centers through the senses would easily be pushed aside. The more frequently the fear act is performed, the less appeal the heart needs make to the nerve centers, and it is often accomplished by the heart itself and by some less important organs, without such appeal.

Cardiaphobia is not necessarily the result of influences proceeding from ideational centers but is often clearly demonstrated to be immediate and intrinsic. If a loud noise as of an explosion take place near us, even if asleep, the heart begins to beat much faster than before. We betray this fear element without ideation, and when the ideational centers act, there is a tardiness because of their influences. Finally, fears may occur in the most valorous and are beyond the control or suggestion of the will.

In our study of the phenomena of the fear element in functional diseases of the heart, we must keep in view the fact that the nerve-cells may store up the fear elements, and while apparently latent, the fear-charged cells are under tension and thus resemble in their possibilities the Leyden-jar,⁶ and contact may secure a more or less violent discharge. This may be accomplished by a slight cause, either extrinsic or intrinsic to the body. Thus sudden fright may precipitate an attack of the most persistent and severe form of cardiaphobia, which primarily has its source in the ideational centers. Cardiac fear of this kind endures for months and even years, and displays itself on occasions in the half-convulsive demeanor that possesses the cardiac plexuses and ganglia. The cardiaphobia may express itself in loudest terms or write its characters very large within the cardiac area, and yet take its primal origin in the brain. Again, there are fears which come into the psychic experience so suddenly and violently that for a time they half hypnotize the psychic element, so that the somatic and cardiac factors are the only ones observed. In these cases, there is an exaggerated anxiety and an excessive apprehension pervading the entire life with corresponding cardiac perturbations. Pseudo-angina pectoris,

tremor, vague thoracic experiences, without proportionate change in heart demeanor, usually indicate the psychic character of this disorder. It is more psychic and less cardiac than the succeeding classes. Beginning in the ideational centers, we would naturally infer that the mind would be prepared with its defense, but experience proves that the cardiaphobia thus induced, acts with such intensity and celerity that the knowledge that should be anticipatory of it, is disassociated.

A case which illustrates this form of heart fear came under my observation in October, 1892. The patient was a man thirty-two years of age, height five feet, nine and one-half inches; weight, 187 pounds, and of good family history. His life had been free from serious illness. Several years prior to his call on me he had feared his heart would cease beating, and while describing his symptoms he was unconsciously feeling his pulse. When his attention was called to the fact, he admitted that it was his habit. At night he was afraid to sleep lest he might not live until morning. He, therefore, suffered from insomnia. He was afraid to be alone, and as he was a traveling man this was very inconvenient. He always walked very slowly, lest an accidental death might result from his exercise. He would suddenly leave the social circle or the card-table to hide his fright, and yield to a vague demand of his heart. This fear of sudden death caused unwarrantable limitations and modifications in his habits, diet, regimen, and usefulness of life.

A physical examination revealed functional derangement of the heart. Tachycardia increased the frequency of the heart beats to 146 per minute. Observations made at short intervals discovered the heart-beat reduced to 98 per minute. There was an irregular intermittence occurring five times during the minute of rapid action, and only twice during the more quiet action. These omitted heart throbs created a corresponding breach in the respiratory action, and a sighing respiratory effort. The countenance at this instant became exceedingly anxious. The lungs presented no evidence of disease. The digestive apparatus was taxed in the performance of its duties because the subject ate freely. This he did without relish, and he indulged in alcoholics to slight excess. His tongue was large, flabby, furred, and somewhat pale. Bowels irregular, but usually one evacuation each day. Complained of visual limitations and headaches which were of evanescent duration. He was disqualified for mental or physical exertion. Urine of normal quantity, high specific gravity, and loaded with urates. Because of his general aspect of health he claimed to have been subjected to unsympathetic treatment by friends and also by physicians.

After the examination and hopeful assurances he departed with apparent satisfaction, promising to follow the treatment suggested. On the next day, however, he returned to have his heart re-examined, fearing that something had escaped detection. This

was repeated for months, until there was marked improvement. He then disappeared to return in 1895, after a lapse of nearly three years. He reported that he had been comparatively free from any cardiac malbehavior, although vague apprehensions would suddenly seize him that the heart perturbation might return. His visits have been repeated frequently, and at each departure he asks the question, "Are you sure, Doctor, that I will not die suddenly?" The psychologic source of fear in this patient still remains active to haunt his life, and at such times to perturb his heart. He admits that on several occasions since his departure he has arrived at the diagnosis in his own case of incurable heart lesion.

In the second group the fear elements succeed upon the cardiac malbehavior, and are secondary, without preliminary ideation. The functional disorder in the heart may exist for an indefinite period, without any manifestations of a psychic fear element. The depression in the precordial region and the startling terror-laden heart throbs are sufficient in themselves to reproduce the most fossilized neural tweaks and shudders of Arcadian times. There are circumstances when nothing appears but the intrinsic manifestations, and a fear uprises that is thrust upon the consciousness by a missing heart-throb or some other perversion of the cardiac action. This is the form of fear that seems to rest on experience. It is not psychical, but is located in the somatic life. This is the most closely associated cardiaphobia. When alarm is given to the heart directly through its intrinsic nerve cells, it is attended by cardiac distress peculiarly its own, and that is separate and distinct from the object feared. No more real symptoms can appear than these that are so closely associated with and abiding in the heart. Moreover, they may be forced upon the attention of the psyche through any or all the nervous channels in sympathy with the cardiac anxiety. When the precordial symptoms subside, there is, as a rule, a complete hiatus in the distress for some time. Rarely in the intervals of cardiac calm the subject anticipates with dread the recurrence of the distress, and each ache or pain in the vicinity of the heart is magnified into a possible fatal return. This fear of its return in this and other groups of cases has somewhat to do with its return. No emotion or pronounced impression takes place without immediately acting upon the heart and blood-vessels. In the absence of heart malbehavior the patient is ashamed of his alarm, but resumes it immediately on the return of the palpitation.

Among the cases recorded of those belonging to the second group, I refer to one very characteristic. A physician who had suffered from several

paroxysms of palpitation with accompanying arrhythmia was prompted to repair to my office, a distance of five squares. The exercise incident upon the more or less hasty walk seemed to aggravate his symptoms. At each step his anxiety seemed to augment. Upon arriving at my office and finding me temporarily engaged, he unceremoniously rapped upon my private door and called loudly for me. He explained by assuring me that he did not think he could live another minute. An immediate examination and some temporary medication served to calm him somewhat, and the paroxysm gradually faded away. During the succeeding six months he reported three lesser attacks, but at the expiration of one year and three days from the first appearance at my office he returned in a like frame of mind, and after similar treatment he retired, since which time he reports entire freedom from such experiences.

In the third and last form of the expression of the fear element, there is an evidence of the psychic and cardiac activities combining. The clinical picture in these cases is a changeable one. There are varied and kaleidoscopic diversifications that are not always traceable to their true cause. This is due to the mutability as well as the multiplicity of the disturbances and their factors. Whether or not the fear influence begins simultaneously at both ends of the chain, the expressions appear at each extremity of the circuit at the same instant. By the manifestations in some cases it is to be inferred that the fear element is hidden deeper in the psyche than in the soma, and they can more readily be appreciated by the sphygmograph, the educated finger-tips, and other physical means than by an analysis of the psychic phenomena. On the other hand, these subjects are often found without heart perturbation, but the ideational freedom is accompanied by the subjective sense of something wrong in the precordial region. Cardiaphobias of this class often arise with no pronounced demonstration of either the somatic or psychic life, but these factors naturally develop into prominence. When thus developed, with both extremities of the nervous chain active, they are not easily differentiated as to their cause or primal origin. The degree of cardiac self-consciousness is more marked than cases observed in the first group. The functional malbehavior of the heart is placed under closer observation, and this increases its activity and retards intrinsic repair. Moreover, by the greater activity of the heart the brain is more generously supplied with blood, and the ideational centers thereby acquire unusual energy. The intermediate nerve-links, including the vagi, sympathetic, medullary center, as well as the vasomotor system may act as mediators between the cardiac and

psychic tumults. It is in this mixed group that we most commonly find those subjects who are accompanied by a weakness that prompts them to hide their fears. Like pent-up grief, this fear element when hidden is more dangerous and disqualifying than when open. From very fear of finding out the cause of his distress the sufferer hides the cardiaphobia from his physician.

A man, thirty years of age, weight 143 pounds, height five feet, eight inches, manager of a dry-goods house, and of previous good health, had felt uneasiness in the precordial region with a sense of respiratory limitation. The paroxysms grew more and more unbearable as he thought upon the necessity for medical counsel. His pulse reached 126 per minute. During two or three successive minutes intermissions would occur. A varied period of freedom from irregularity would succeed. Any reference to the perturbed or irregular action would have the effect of augmenting the perturbation. The psychic and somatic influences were interactive, and ran the gamut of discomfort so that moral expedients were deemed imperative, but they were without avail. As long as the patient's disorder was the subject of his thought or the topic of conversation the irregularity and anxiety were increased. An attempt to secure a sphygmographic tracing of the pulse at our first interview was abandoned because of its awe-inspiring results. Treatment, aided by time and experience, have rendered subsequent attacks less appalling, and during the eight months he has been under observation they have been separated by wider intervals and reduced in severity.

To enable us to approach an unbiased judgment we must rid our minds of the fallacious belief that the fear products are the results of imagination. The fear element, when properly educated, drilled, and disciplined, and manifesting itself through wholesome life, must be regarded as distinct from those expressed under excitement and through functionally deranged organs.

To describe these symptoms or conditions as nervous is equivalent to saying that they are fanciful or fictitious. Constancy in any symptom must be regarded as evidence of its reality, and it enables a diagnostician fully to determine the underlying conditions. When we approach a patient who is insane from terror it is no fit time or occasion to attempt to calm him by telling him he has a diseased imagination. No patients are more to be pitied than those under the thralldom of cardiaphobia. I am convinced from their point of view they are the victims of misery to which actual pain would bear no comparison; which the physician, try as he may, cannot comprehend. Whether this fear element is worthy of the physician's recognition as a symptom and a guide to the diagnosis and treatment, is, to

my mind, answered affirmatively. No longer should we call it hysteria, hypochondriasis, dyspepsia, imagination, and neurasthenia. It should be denominated cardiaphobia, and regarded as a reality with its roots imbedded in the somatic as well as psychic life. It is well also to remember that these conditions do not arise only in the half-foolish, crochety individuals with weak nerves and small mental endowments, but they are oftentimes the unfortunate belongings of the best.

The diagnosis of these cases is not always as simple a procedure as might, on first thought, appear. When a heart is greatly perturbed it is difficult to make a satisfactory physical examination, and it will be found necessary to defer this portion of the analysis until a more quiescent period. True cardiac lesions must never escape detection, and these special conditions of heart fear must be placed in the right category. A due amount of importance must be accorded each symptom and group. The gravity associated with them must not be disassociated. In the first group the discrimination is quite easy, at least it is readily separated from the second and third by its primary expression in the ideational centers. It is often attributed to the imagination in its first outbreak, especially by those who believe the imagination is nothing, and proceeds from nothing. There is something too real in the symptoms attending to be thus interpreted by the observing physician. In each class the symptoms must be carefully reviewed. In the mixed group there will be a division of the fear manifestations between the heart and the ideational centers. Now one will preponderate, and, anon, the other gain the ascendancy. This will involve instability as to the character and position of the fear element. The precedence or early preponderance of the intrinsic cardiac element will usually suffice to prove that the heart enervation is the primal cause. Hysteria should be separated without difficulty because of the absence of the most fundamental symptoms that constitute the heart fear an entity.

Hypochondriasis is, as a rule, a product of the ideational centers, but is rarely, if ever, associated with cardiac malbehavior. There are some symptoms that stand out very evident which belong to dyspeptic conditions, and which are very commonly associated with malbehavior of the heart. These are not the necessary concomitants of the fear element as exemplified in functional heart derangement, but they often add to the fury of the nerve storm when they are present. To class these sympathetic influences with the phenomena of cardiaphobias would be widely remiss, because the latter originate in heart and brain and the former are reflex. Some

have intimated that these fears are the results of neurasthenia. The phenomena under consideration are specifically local products of the heart, the brain, or both, but not of a general irritability of the entire nervous system, as is neurasthenia. Finally, we will be aided in diagnosis by remembering that the fear element is more commonly associated with functional derangement of the heart than with any other disorder. Very rarely are they found in the insidious quiet forms of organic heart disease, and it is only when there arises some associated functional disturbance that fear comes to the front.

The prognosis may usually be regarded as favorable. The personal equation must be taken into consideration in each case. Fears that might be very injurious to one would act as a tonic to another. Especially will this hold good when they are results of perfect functions.

Age constitutes an important factor in our estimates of the prospects. The sudden vascular tension incident upon some of the more severe cardiaphobias must be regarded as serious if occurring after middle life, and may prove to be the weapon by which the last fatal stroke is inflicted. There comes a stage of fear change that belongs usually to advanced life which we may call the stage of forgetting or failure to reproduce the protecting fear. When the heart or brain fails to be impressed with fears that once were occasions for the uprising of nerve storms there is something seriously wrong. The persistence, as also the severity, may intimate the probable outcome. If heart fears continue with cardiac perturbation throughout a period of years, even with the ordinary intervals of relief, there will be found some myocardial changes. If nothing more than hypertrophy of the most benignant nature, it is to be estimated as a step toward other changes. The blood-forming functions associated with respiration and digestion, as well as general trophic metabolism, will each yield up some capacity as sequelæ to protracted cardiaphobia. It should be looked upon as evidence of nerve weakness when the subject is prompted by fear to shrink from the verdict of the diagnostician. The effect of such secrecy is the useless expenditure of nerve fluid. In all low states of vitality the sudden uprising of the fear element will be more influential than in normal conditions.

In treating these patients we must bear in mind that we cannot hope to eliminate fear, but it should be our purpose so to manage it that it may have the power of proper reaction. This may be achieved through medico-moral therapeutics. The treatment by moral suasion alone has little to commend it empirically, but there are patients who, if once made to

realize that their fears are beneficent in design, and are but timely warnings which they should eagerly heed, will experience an intellectual gratification and somatic freedom that is worth the price of rubies. No one, however intellectual, but will experience a charm when he feels this advance in the character of his fears and his relations to them. Excessive fears, however, must be controlled by other means than those appealing through moral influences. It is the disposition of most of the subjects to seek temporary relief by indulgence in alcoholics. Unless the patient be anemic, or weakened by previous drain, the use of stimulants or heart goads is contraindicated. Bromids have held a popular place in the treatment of all undue nerve uprising or irritability; I mention them to condemn them as inefficient. A remedy is needed that will act with celerity and potency in securing desirable quiescence. If in our investigation we have carefully eliminated serious heart lesion, chloral hydrate may be boldly employed, and the dosage in quantity and frequency pushed until our patient has secured a dreamless sleep extending over a period of at least four or five hours. This will be found to give much relief to the symptoms, no matter whether intrinsic to the heart or belonging to the ideational centers. Trional, usually administered in 10-grain doses, is well borne under these circumstances in 30-grain doses, repeated in three or four hours until sleep is produced. This drug has the advantage of being free from depressing effects upon the heart, and can be employed even in the presence of heart lesions. The doses selected should be given in a glass of hot milk. Acetanilid and phenacetin will emancipate the nerves from their irritability, but will not relieve with certainty the cardiac arrhythmia. Tonics must be administered to replace the nerve outlay. The physician should have constant oversight and often reassure himself by repeated examination so that he may rationally assure his patient of the hopeful prospects for relief.

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⁶ *Ibid.*, p. 57.
⁷ *Ibid.*, p. 114.

Rectal Specialists.—During the meeting of the American Medical Association at Columbus, June 6th to 9th, there will be a meeting of the medical men engaged in the practice of proctology, for the purpose of effecting a permanent society for the study of their specialty. Physicians interested in the project are requested to address Dr. William M. Beach, 515 Penn Avenue, Pittsburg, Pennsylvania.

A BACILLUS RESEMBLING THE DIPHTHERIA BACILLUS IN ALL CULTURAL CHARACTERISTICS, BUT NOT PRODUCING DIPHTHERIA TOXIN.

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THE occasional development of a case of diphtheria among the cases of scarlet fever in the Willard Parker Hospital caused an examination to be made from time to time of the throat secretions of patients on their admission or during their stay. It was discovered that at certain times the secretions from fully ten per cent. of those admitted from the tenement district with scarlet fever contained bacilli which microscopically and culturally were characteristic of *B. diphtheriae*.

During a portion of the winter of 1897-98 nearly fifty per cent. of the scarlet-fever patients developed otitis media, and as this was a quite exceptional occurrence, Dr. William H. Park made cultures from the ear abscesses of two patients. Smears from the growth on the serum tubes from the first patient revealed an almost pure culture of a short bacillus with considerable differential staining, and with most of the individual bacilli lying parallel to one another, and these bacilli resemble the shorter form of the diphtheria bacillus. From the second case an agar-plate had also been made; this showed a variety of colonies. Upon careful examination of these a few were found with the following characteristics: Dark centers, light uneven edges, various tones of shading and granulation, and colonies which microscopically resemble those of *B. diphtheriae*.

Serum tubes were made from these colonies, and, after twenty-four-hours' growth, smears from these showed bacilli extremely characteristic of that of Löffler. They were polymorphic, some long, irregularly staining, others short and evenly staining. Agar-plates made from bouillon-cultures showed spreading colonies with light uneven edges and dark centers. The colonies were creamy white, and, as a rule, the growth was a little heavier than one expects to see in true *B. diphtheriae*.

The presence of this bacillus in these two cases led us to obtain cultures from other cases of scarlet fever in which otitis media was present. Cultures were also taken from the throat of most of these patients, as it was supposed that the bacilli might have migrated through the Eustachian tube. Cultures and smears were examined from twelve of these patients, and short bacilli, staining irregularly, were found in all. The bacillus was isolated from ten cases. In all of this series the bacilli were isolated from the cultures made from the ear abscess, but in

three of the same patients the cultures from the throat gave negative results. Unfortunately, in these three instances the cultures were not taken from the throat until five days after cultures had been taken from the ear, and no controls were made from the ear at the time the throat cultures were taken. The throats were fairly clean when the cultures were made, and so it may have been that the bacilli, though originally present, had disappeared, as was sometimes found to be the case when second cultures were taken from the ear. Once the bacillus was also isolated from an abscess in a cervical lymph-node of one of the patients. In another similar case it was not present, though found in the throat and ear of the same patient. In both of these cases the chief infection seems to have been *staphylococcus aureus*.

No diphtheritic symptoms were noticed in any of the patients, but the unusually large number complicated by otitis media is interesting, and was perhaps due to the presence of this bacillus. Most of these patients at some time had rhinitis; otherwise the cases presented nothing of especial interest, with the exception of one patient, again to be referred to. One case of the twelve proved fatal, the patient dying of gangrenous cervical cellulitis of the neck and bronchopneumonia. These conditions had developed before the child's admission to the hospital. None of these patients had unusual throats for scarlet fever, but cultures were made merely to prove or disprove the presence of this bacillus.

In the case already alluded to, cultures were taken from both ear and throat of the patient, though at the time there were no throat symptoms. Smears from these tubes showed bacilli very typical of *B. diphtheriæ*, from the throat as well as the ear, and the colonies on agar-plates were very light and spreading. The cultures in every way looked characteristic of a virulent diphtheria bacillus, but when inoculated into guinea-pigs 2 c.c. of a bouillon culture failed to produce any reaction. Five days after these cultures had been taken a membrane developed in the patient's throat, and an examination made at the Hospital showed what was considered to be diphtheria bacilli. The patient was isolated, but the membrane disappeared after five days, and the patient recovered.

Cultures were made from the throats of two scarlet-fever patients who did not develop otitis media, and this bacillus was not found either in the smears or the cultures. The possible relation to otitis media and the necessity of knowing whether the cases in which this bacillus occurred were dangerous, led to a careful study as to its relation to virulent diphtheria bacilli.

The bacilli isolated in the twelve cases vary somewhat in appearance, both as individuals and also as to the shape and color of the colonies on agar-plates. Some grow in rather heavy dark colonies, while others are light and spreading; some give pellicles on the bouillon and leave the fluid clear, while others do not give as heavy a pellicle, but cloud the entire media. However, in all cases the general appearance of the bacilli and of the cultures is the same, and they differ among themselves no more than do diphtheria bacilli from different sources. When stained with the Neisser stain, which C. Fraenkel especially recommends to differentiate the true bacillus from the pseudo, all show the end stain and decolorized body.

With the exception of Case II., none of the bacilli proved virulent to guinea-pigs in doses of 2 c.c. bouillon culture. Some of the pigs lost weight rapidly, and appeared sick and then gained again. Little or no edema was noticed even at the point of inoculation. A pig inoculated in the abdominal wall with 2 c.c. bouillon culture from Case II. died within twenty-four hours after inoculation. At autopsy the pig did not show edema or congestion at the point of inoculation, but there was a general serous peritonitis, and the kidneys, liver, and spleen were all much congested. The plates and cultures made from the heart-blood, liver, and tissue about the point of inoculation showed pure and abundant cultures of the bacillus. The absence of characteristic diphtheria lesions and the presence of general blood infection made it seem of sufficient interest to follow this organism further.

Morphologically, it bears a most striking resemblance to the bacillus diphtheriæ. It is polymorphic, sometimes short, rather evenly stained, while the individuals lie in parallel lines; at other times it is long, lies irregularly, and gives the broken stain typical of *B. diphtheriæ*. It also shows the characteristic reaction when stained by the Neisser stain. It is non-motile, positive to Gram, produces acid by its growth in glucose bouillon, and does not form gas in fermentation-tubes. In cultures, careful comparison has been made with cultures of several diphtheria bacilli, and although there is a constant difference, in most instances it is so slight that it is only noticeable when the cultures are carefully compared, and it is no more than occurs between any two cultures of diphtheria bacilli.

The diphtheria bacilli tested form a heavy granular pellicle in bouillon, but the pellicle formed by growth from Case II. is thin, gray, and smooth, together with a heavy precipitate at the bottom of the tube, while the broth itself is left clear.

On agar-tubes the growth of diphtheria is decid-

edly granular and very white, while Case II. shows an even, almost transparent growth. This same variation is seen on glycerin-agar, the colonies of diphtheria inclined to be granular and flaky, while Case II., on this media, is more of a gray-white, much dryer in appearance, and more inclined to grow in small colonies. On potato neither show a visible growth. On blood-serum the macroscopic appearance is much the same. Both grow very poorly on gelatin. The same characteristic differences in the growth of these two organisms are seen in the cultures, whether grown at room temperature or in the incubator.

Although the cultural variations between this bacillus and *B. diphtheriae* have been of interest, the most characteristic and significant difference between the two has been found in pathogenic properties of this organism. Though the animal experiments thus far have been somewhat unsatisfactory, still they have shown important reactions which the true *B. diphtheriae* never presents. After the first experiment had been performed, in which the pig was killed with 2 c.c. culture, some time elapsed before another inoculation was made, and the culture had lost its virulence, for neither the original culture nor the pure culture derived from the heart-blood of the first pig would kill with 2 c.c. of the growth. Five cubic centimeters were tried, with no apparent ill effect, and finally 11 c.c. of a twenty-four-hour culture were inoculated subcutaneously, with the result that the pig was dead the next morning. No edema was seen at autopsy, but the subcutaneous and muscular tissues were much congested. There was extensive peritonitis, and slight congestion of the kidneys, liver, and spleen. The latter was slightly enlarged. Lungs normal. Cultures from the organs showed very heavy growth of pure cultures of the bacillus; even the plates and tubes from the heart-blood showed a fairly large number of colonies. Smears made at autopsy, especially from the spleen, show very beautiful pictures of phagocytosis. There are a large number of bacilli which show the end stain and many groups of leucocytes massed together, all well filled with bacilli. The cell outline of these leucocytes is broken away, and throughout the smear are fragments of nuclei from broken-down phagocytes. Apparently, as judged from the smears of liver and other tissues, the bacilli have not invaded the tissue-cells themselves, but as yet no sections have been made.

A pig was inoculated, subcutaneously, with 9 c.c. of culture mixed with $\frac{1}{4}$ c.c. 750-unit antitoxin. At the same time a control was inoculated with 9 c.c. of the culture. The last animal lived, while the former was dead the next morning, and the autopsy showed

much the same condition as that of the previous pig (which had not received antitoxin), except, in this instance, the lungs were greatly congested, and there was fluid in the pleural cavity; the peritonitis, also, was of a purulent type. The smears and cultures showed relatively the same number of bacilli as in the previous case.

The variations in the animal experiments have been very great, as a pig may die from a certain amount of culture, and another, inoculated at the same time with the same amount, may live. In general, it can be said that the pigs which have received antitoxin have died more quickly than those which have not. As much as 5 c.c. of antitoxin, containing 850 units per c.c. have been tried, when 10 c.c. of culture was inoculated, and still the pig died within twenty-four hours, while a pig inoculated at the same time with 10 c.c. of the same culture alone may live a day or so longer. Some of the pigs used in these experiments had previously been used to test antitoxin, but the fact has not seemed to appreciably effect the virulence of the bacillus.

From these experiments it is found that the bacillus produces a general septicemia, or, at least, it is found abundantly in the blood, after the infection of large numbers of bacilli, and that it does not form a diphtheria toxin, nor does it form any strong toxin of its own, for 8 c.c. of a seven-day culture sterilized with carbolic acid did not produce a reaction.

Experiments have been made to determine whether this bacillus is more virulent intraperitoneally than subcutaneously, but nothing very satisfactory has yet been found, as the pigs seem to die after about the same number of hours and peritonitis is always found at autopsy, although in those inoculated intraperitoneally the peritonitis is of a more extreme degree.

Here it is of interest to note that Spronck endeavored to differentiate the true *B. diphtheriae* from the pseudo by means of inoculation with antitoxic serum. For the most part his cultures of pseudo, in doses of 1 to 3 c.c., produced edema, ruffling of fur, loss of appetite, and loss of weight. After a few days these symptoms disappeared and the pigs were apparently normal again. The same results were obtained when the protective serum was injected six to thirteen hours before the culture, only the pathogenic symptoms were exaggerated; however, no fatal results were obtained in any case. When the pseudo is of sufficient virulence to produce edema Spronck thinks the serum an accurate means of diagnosis.

This series of experiments was afterward repeated by C. Fraenkel. He worked with seven pseudos from the nose and eyelids of sick and well, also one from a conjunctiva crouposa. When 5 to 10 c.c.

were put into the body he noticed more or less extended swelling and infiltration which disappeared after a few days, but none of the changes of the general nature which Spronck had mentioned. This was the same even when he injected 56 c.c. of a young or old culture. But the injection of the antitoxic serum either before, at the same time, or after the injection of the culture failed to prevent the slight local changes, which took place much the same as if the serum had not been injected. This fact rather shakes the belief of Fraenkel that the diphtheria and the pseudo belong together.

Fraenkel also noticed much uncertainty in regard to the results obtained from the inoculations, into pigs, of the same cultures, in either the same or varying amounts, though he never obtained fatal results. He thinks that these variations are probably due to the "individual disposition" of the guinea-pig, and also somewhat dependent upon the location and manner in which the inoculation is made. This variation in the animal experiments, not only in different, but also in the same cultures of pseudo, make the differentiation between it and the true *B. diphtheriæ*, doubly hard. But both Spronck and Fraenkel agree that the bacillus which gives a clear acid reaction in glucose bouillon is usually virulent.

Much assistance in regard to the relative number of bacilli actually present in the throat and ear has been given by the practice of taking smears at the same time as the cultures. This seems a much more accurate method of determining the proportion of the bacilli to other bacteria, for if some spreading organism be present, as pyocyanus, a few colonies of the bacillus would be overrun, while the bacilli would be evident in the original smear. On the other hand, from blood-serum tubes, one might think that there were relatively a larger number of bacilli present than is actually the case, for the diphtheria bacilli outgrow, for instance, streptococci which ought to be found with them. Probably bacilli of this kind are frequent, for several bacilli which came from quite different sources have been worked out by Drs. Park and Williams along the same lines. They, also, have proven virulent in doses of from 3 to 10 c.c. and been unaffected by diphtheria antitoxin.

Although this work has not been carried sufficiently far to obtain very important results, still it has suggested many points of interest. The fatal results obtained when the diphtheria antitoxin was injected with the culture seem to be different from anything reported up to this time. Can we say that this is an attenuated diphtheria, a variety of that group, or an entirely different organism? It would seem that there are many points in favor of any one

of these conclusions, but it is to be hoped that further work will determine this more definitely. Another point of interest is its connection with otitis media.

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AN EXPERIMENT IN TRANSPLANTATION OF THE ENTIRE HUMAN OVARY.¹

By JAMES H. GLASS, M.D.,

OF UTICA, N. Y.;

SURGEON IN CHARGE OF THE FAYTON HOSPITAL.

Miss S. C. (indicated for convenience as Case No. 1), by occupation a housemaid, aged thirty-nine years, applied for treatment May 9, 1898, two years before having had a double oophorectomy for a somewhat indefinite condition. The menopause, supervened promptly, sexual instinct being diminished, and soon lapsing completely. The nervous symptoms so frequently following the menopause, natural or artificial, were present and characterized by marked mental depression, insomnia, giddiness, palpitations, heat flushes, perspirations, pelvic pains, and constipation. Nutrition was impaired; she was chlor-anemic, and incapable of the exertion incident to her usual occupation.

Examination demonstrated a uterus somewhat smaller than normal, flexed, and fixed posteriorly. A cautious prognosis was given, the patient being advised that she might expect some good effect from general treatment including the use of ovarian extract, and that improvement of the pelvic pain might possibly follow release and ventrofixation or suspension of the flexed and adherent uterus. Having been under general treatment almost constantly since her operation without benefit, she naturally lacked confidence in medical measures and was impatient of delay of any procedure offering a remote probability of relief from her distressing condition. She urged immediate operation, and this was performed May 11, 1898. The uterus, having been disengaged, was suspended to the abdominal wall in front, all raw surfaces being carefully covered with peritoneum.

A brief history of Case No. 2 is interposed for the purpose of establishing the juxtaposition necessary in the conduct of the experiment: Mrs. A., aged seventeen years, married, no children living, was delivered of a dead child one year ago, the head having remained in the inferior strait several days. Extensive sloughing followed, leaving after cicatrization a canal at its narrow point five millimeters in diameter. The patient had been referred to me for such reconstruction of the vagina as might be possible through plastic operation, her physician believing that patency of the vagina was more or less es-

¹ Read at the Ninety-third Annual Meeting of the New York State Medical Society, held at Albany, January 31 and February 1 and 2, 1899.

sential to the preservation of the conjugal relation. The result following operation was good, the vaginal diameter without painful dilatation having been increased to twenty-five millimeters. The inadequacy of the canal, however, for possible future child-bearing was apparent, the necessity for the Cæsarian operation in her case explained should pregnancy supervene, and the patient recommended to have excision of both tubes or perhaps of one tube, and one ovary, for the prevention of conception. The latter alternative was accepted, the patient readily consenting to the employment of the amputated ovary in the transplantation-experiment proposed.

May 14th, three days after the abdominal section for the suspension operation in Case No. 1, both patients were anesthetized and brought to the surgery together, the most scrupulous care having been taken in the vaginal sterilization of Case No. 1. Resection of the tube and amputation of the ovary in Case No. 2 were rapidly performed, the healthy ovary being placed in gauze kept moist with warm normal salt solution in the interval of time between its amputation and implantation in Case No. 1, which was accomplished by incising the vagina and connective tissue down to the cervix, which was stripped up to the peritoneum with the finger, which membrane was carefully raised from its attachments to a point approximating the normal position of the ovary. All oozing was controlled by compresses wet in hot salt solution, and the amputated ovary anchored in position by closing the canal through which it was introduced by two tiers of fine cumol catgut, and the vagina lightly packed with silver gauze. Two days later I left the country for six weeks, instructing my assistant, who had followed the steps of the operation critically, that should there be the least evidence of non-viability of the ovary it was to be removed promptly. The recovery, however, was reported as uninterrupted. After my return I was informed by the patient with evident embarrassment that six days after the transplantation she had a condition of sexual erethism continuing for several days, during the period having had two erotic dreams. From this time she says she has continued to have a positive sexual impulse. Sixteen days after transplantation menstruation occurred, and lasted two full days. No recurrence of the menses followed, however, until December 22d last, when she again menstruated,¹ the flow continuing three days, being natural in color and consistence, and accompanied by a little pain. At this time, nearly eight months after transplantation, the patient has apparently regained her mental and nutritive equilibrium and says she is well, a statement borne out by her deportment, good color, and general healthful appearance.

Normal ovariectomy is followed so constantly by certain phases of denutrition and neurasthenia that there remains no reasonable doubt that the ovary has a function besides that of its external secretion or ovulation, which plays an important part in metab-

olism. Whether this is an internal secretion of unknown chemical composition which has the faculty of oxidizing organic phosphorized substances, carbohydrates, and fats, as maintained by Curatulo, or whether the ovary influences the elimination of organic toxins through the menstrual flow, as suggested by Spillman and Etienne, will perhaps be shown by the physiologist who now is actively engaged in an investigation of the phenomena presented by certain special organs of the body, and the effect of their secretions upon general and special nutrition.

Fehling's theory, that osteomalacia is a trophic neurosis due to excessive pathological activity of the ovary, with the well-known fact that the disease receives a fresh impetus after conception, has a new significance since Consentino has shown that ovulation continues during reproduction and is important negative evidence of the influence of the ovary and its secretion on nutrition. If further argument were necessary to demonstrate the modifying effects upon nutrition of the ovary, or its essential principles, we may refer to the experiments with ovarian extracts procured from the lower animals, original with Professor Werth of Kiel, which have been substantiated by Landau, Stouffs, Stehman, Jayle, Jacobs, Dunn, and many other eminent authorities who have conclusively shown that the administration of the extracts (which appear to preserve, their integrity in the presence of the digestive fluids or reach the circulation so little changed that their physiologic action is not materially interfered with), generally mitigates or completely relieves the train of disagreeable and distressing symptoms usually following the appearance of the menopause, natural or artificial, so long as the subject remains under the influence of the extract.

However feasible or desirable the operation may become, transplantation of the human ovary must always remain an uncommon operation by reason of infrequent opportunity to establish the juxtaposition necessary; but we see no reason why it should not become a recognized and successful procedure, notwithstanding the probable limited field offered for its execution.

At the suggestion of Professor Chrobak, Dr. Emil Knauer, whose experimentation began in 1895, has shown¹ (1) that in rabbits the ovaries may be transplanted from their normal to other positions; (2) that they may heal in as well on the peritoneum as between the muscular structure; and (3) that the ovaries thus healed in can not only be nourished but they are able to perform their functions, *vis.*, generate and ripen the ova, and possibly under certain circumstances attain their discharge. In a later

¹ Since the presentation of this paper the patient writes me that she again menstruated in February, 1899.

¹ *Centralblatt für Gynäkologie*, No. 20, 1896.

paper¹ Dr. Knauer reports births at the normal end of pregnancy after transplantation of ovaries in rabbits, which he succeeded in attaining with a rabbit which he had operated upon sixteen months before.

In this case he was able to show, thirteen months after the operation, the successful transplantation of ovaries by means of laparotomy. The perfect ability of function of transplanted ovaries was thus proven beyond a doubt. He has since continued his experimentation, trying the transplantation of ovaries from one animal to another. During the year a paper referring to these experiments² will be published.

That the range of usefulness of ovarian therapy, immediate through its introduction directly into the circulation by transplantation, or otherwise, or intermediate through the use of extracts by the mouth, is being rapidly narrowed down, there can be no doubt. Since Polk, ably seconded by other great specialists, early in the present decade inaugurated and urged a greater conservatism in operations upon the uterine appendages with a view to the preservation of the functions of ovulation and menstruation, and so consistently and practically demonstrated the tenability of his conclusions in his work, there has come a revolution of feeling as to our responsibility to this class of cases and a better conception of the necessity for the preservation of these organs, until now the better element of the profession would brand as criminal the individual who, with ruthlessness or upon a flimsy pretext, would deprive the patient intrusted to his care of these organs of the usefulness of which, *aside from the marital and reproductive aspects*, there remains so little doubt.

Christopher Martin in a recent article tells us that none of the nervous and nutritive symptoms supervene in operations upon the adnexa in which an ovary or a part of one has been left; that there is physiologically *no difference* in the woman who has *two ovaries, one ovary* or a *fraction of that organ*. This proposition tallies with that of the writer who, for the past two years, has made a consistent effort to save an ovary or a part of one in a great variety of pelvic operations, from Cæsarian hysterectomy for cancer down the list of procedures to the most simple, having many times curetted, cauterized, resected, amputated, on one, sometimes on both, sides with no more serious result than two abscesses and a single hyperplasia of the ovary (it having quadrupled in size in three weeks from the time of the original operation for pyosalpinx of the opposite side)—conditions easily controlled by vaginal sections and a trifling delay in convalescence, an insignificant sacri-

fice, we think, for the stake involved. In my personal experience with the convalescent after abdominal operations since adopting a definite plan of ovarian conservatism I am certainly less frequently confronted by those profound nervous disturbances and malnutritions formerly ascribed to prolonged shock and exhaustion. May not the smoother convalescence in these cases be reasonably attributed to the continued influence of the ovarian secretion? I trust the time is not far distant when a greater conservatism aided by an improving technic and dexterity shall make it rarely necessary to consider organo-ovarian therapy and surgery except in their several relations to the menopause of nature.

THE SERUM TREATMENT OF DIPHTHERIA IN THE NEW YORK FOUNDLING HOS- PITAL DURING 1898.¹

By W. P. NORTHRUP, M.D.,
OF NEW YORK.

DURING 1898, 103 patients with diphtheria were treated with antitoxin at the New York Foundling Hospital, with 13 deaths, a mortality of 12½ per cent. The diagnosis was confirmed by bacteriologic cultivation in pharyngeal cases. Laryngeal cases to the number of 12 have been included, in which on one cultivation the bacteriologic report was negative. It is stated by Health Board experts that frequently such cultures taken from the pharynx are negative, while at the same time the lesion has been proved to be laryngeal diphtheria. Two of these patients required intubation, but all recovered. Experience at the Foundling Hospital leads the writer to believe that that these cases may fairly be considered diphtheritic. Rejecting these twelve cases altogether leaves a mortality of 14 per cent., which figure we may consider very satisfactory.

	CASES.	DEATHS.	PER CENT.
Pharyngeal.....	67	4	.06
Laryngeal.....	36	9	.25
Total.....	103.	13.	.12½.

Statistics of immunity are not easily compiled. The strongest statement that can be made from the Foundling Hospital is that there have been so few cases as 103 (most of these patients even being brought in from the out-patient department) and that we have within two years (see MEDICAL NEWS, December 25, 1897) passed through an epidemic of measles without having a single fatal complication of diphtheria.

The antitoxin used in recent years has been that made by the Health Department of the City of New York. There have been no antitoxin joints, no pains, and transient rashes in (estimated) only one-fourth to

¹ *Centralblatt für Gynäkologie*, No. 9, 1898.

² Personal communication.

¹ Read before the New York Academy of Medicine, February 16, 1899.

one-third of the cases. These have been of so little moment as not to have been recorded in the histories. As an immunizing agent it has attained the highest ideal of therapy; it has preserved most lives, and preserved them intact.

In many ways the Foundling Hospital is a favorable place in which to test antitoxin. Greater New York thrusts into our care a large proportion of poorly developed new-born infants. Five of the thirteen fatal cases occurred in children under one year of age, and ten in those under two years; five patients that died were under one year of age; five were between one and two years, and three were between two and three years.

It has been assumed that it requires high intellectual attainments to employ logic and to eliminate at the same time. This audience has been warned against "eliminations" as not for them. Note that Case I. has not been eliminated, and that several more, hopeless at the time of injection, are included.

CASE I.—H. L., aged eight days. Intubated. Tube extracted on third day. Died fourteen days after entrance to hospital. *Autopsy:* Bronchopneumonia.

CASE II.—A. K., aged one year, seven months, and eleven days. Returned from out-patient department with intubation-tube in larynx. Antitoxin three times. Intubated four times in all. Died in convulsions nine days after admission. *Autopsy:* Erosion and inflammation of epiglottis and larynx; bronchopneumonia.

CASE III.—C. S., aged one year and eighteen days. Treated in St. John's Hospital for one month for bronchopneumonia and enteritis. Admitted to quarantine. Condition: croupy, marasmic, bronchopneumonia. Intubated. Antitoxin. Tube extracted on seventh day. Croupy condition cured. Signs of pneumonia. Died seventeen days after intubation. *Autopsy:* Chronic bronchopneumonia; markedly emaciated.

CASE IV.—W. W., aged one year, one month, and nineteen days. Markedly croupy. Dyspnea. Intubated. Child restless. Respiration very rapid. Died thirty-six hours after admission to quarantine. *Autopsy:* Rickets, extensive bronchopneumonia.

CASE V.—J. McM., aged one year and three months. Within an hour after admission was intubated. Colitis. Died in a convulsion twenty-six hours after admission. Bronchopneumonia.

CASE VI.—M. T., aged one year, four months, and twenty-one days. Very poorly nourished. Not seen by a physician until had had diphtheria for (about) four days. Very croupy. Intubated. Died about thirteen hours after admission to the hospital. Diffuse bronchopneumonia; chronic colitis.

CASE VII.—J. V., aged two years, nine months, and seven days. Dyspnea. Intubated twelve hours after admission. Died seven days after extraction of tube, and fourteen days after croupy condition began. Bronchopneumonia; diphtheria.

CASE VIII.—A. S., aged nine months and twelve days. Intubated. Diagnosis: subglottic stenosis. Antitoxin. Died seventeen hours after intubation. Under treatment about twenty-four hours. Diphtheria-nasal, pharyngeal, laryngeal; subglottic stenosis; malnutrition; rickets.

CASE IX.—H. S., aged one month and three days. Died about forty-eight hours after admission. Disease probably had existed three or four days before patient was seen by a doctor. Tonsillar and pharyngeal diphtheria.

CASE X.—H. S., aged four months and twenty-nine days. On seventh day lung involvement. Died twenty-four days after admission. Under treatment twenty four days. Pharyngeal diphtheria; bronchopneumonia.

CASE XI.—E. B., aged eight months and eleven days. Rachitis. Râles in chest. Bronchopneumonia diagnosed on fifth day. Died one month after admission to quarantine. Extensive bronchopneumonia; rachitis; pharyngeal diphtheria.

CASE XII.—J. T., aged two years, nine months, and nineteen days. Markedly croupy. On seventh day after admission signs of pneumonia. Died one month after admission to quarantine. *Autopsy:* Lobar pneumonia, right side, complete. Not intubated.

CASE XIII.—C. D., aged two years and seven months. Tonsils neurotic; sloughed away. On eighteenth day otitis media and double mastoiditis. Died after a convulsion seven weeks after beginning of diphtheritic attack. Had been in coma about six hours. Mixed infection.

Finally, I submit that 12½ per cent. fatality in infant foundlings is an extremely good result; that in immunizing, antitoxin has attained even higher, almost ideal results.

CLINICAL MEMORANDUM.

A CASE OF CHOLECYSTITIS, WITH STRICTURE OF THE DUCTUS CHOLEDOCHUS.¹

BY FREDERICK E. EASTON, M.D.,
OF SYRACUSE, N. Y.

ON August 9, 1897, I was called to attend Miss B. W., aged twenty years, a resident of Chicago, but visiting in this city. I found her suffering from acute pain in the epigastrium, with nausea and frequent vomiting. Her pulse was normal, temperature 99° F., tongue heavily coated, bowels constipated, and skin slightly jaundiced. Her urine was dark, chocolate-colored, but nearly normal in quantity.

About a week previously she had had an attack of acute pain in the epigastrium, with indigestion, which was easily relieved. During the month of March preceding she had had an illness which was called malarial fever, during which she had had pain and vomiting, but no jaundice. She had not been in perfect health since this illness, having been troubled frequently with indigestion.

¹ Read before the Syracuse Academy of Medicine, April 4, 1899.

The present attack differed from the preceding ones, in that the vomiting and pain were more severe, and she was jaundiced. A diagnosis of biliary colic, possibly due to gall-stones, was made. The pain was relieved by morphin, hypodermically, and the vomiting controlled by subnitrate of bismuth, oxalate of cerium, and muriate of cocain. The obstinate constipation was overcome by means of calomel, salines, and copious enemas. The stools, which were putty-colored, were watched for calculi, but none was discovered. The diet was restricted to liquids in small quantities. After the acute symptoms had subsided compound ox-gall tablets were also used.

The patient improved rapidly, although the jaundice increased, but at the end of five days she was about the house apparently convalescent, and I was congratulating myself that the obstruction had been relieved; but on August 25th I was again summoned in haste, and found the same condition of affairs as in the preceding attack, but in a more aggravated form. The pain was referred more to the right hypochondriac region, and was more severe in character. Her temperature was 100° F., and pulse 99. At the end of five days she was entirely free from pain, although some tenderness was still present. She was weaker, more emaciated, and more jaundiced, and gave the appearance of one having passed through a prolonged illness. The urine was examined and found to be charged with bile, but no albumin was present, and it was negative in other respects. Early in September another and more severe attack occurred. Her temperature reached a higher point, her pulse was rapid, at times 120 per minute, her abdomen was tender, and she was extremely emaciated. On palpation the distended gall-bladder could be distinctly felt, which rose and fell with each deep respiration.

Dr. W. C. Kellogg, whom I called in, agreed with me that we had to deal with a case of cholecystitis, cholangitis, associated with gall-stones, which demanded surgical interference. Dr. Elsner was asked to see the case with us, which he did September 12th, and his views of the condition being similar, immediate operation was advised. The patient was taken to New York, and on September 20th Dr. Longe operated.

An incision, two inches long, was made in the right hypochondriac region, parallel to the free border of the ribs. The gall-bladder was found to be thickened and distended, and contained a calculus. The common duct was thickened, but free from impacted calculi. The cystic duct was occluded. The gall-bladder was drawn up against the opening in the peritoneum and stitched firmly to it, effectually closing the opening into the abdominal cavity. This line of stitches was then protected by a narrow strip of iodoform tape. An aspirating-needle was then plunged into the gall-bladder, and a quantity of bile-stained pus removed. The opening made by the needle was then enlarged by the thermocautery, and the calculus seized with forceps and removed. It was the size and shape of a nasturtium seed. The gall-bladder was then cleansed, a long rubber drainage-tube was inserted and fastened in place, the wound was loosely packed with iodoform gauze, and the patient was

placed in bed. Following this operation there was a slight improvement; her temperature fell, her pulse improved, and the jaundice lessened, but the stools remained putty-colored, and there was no evidence of bile having passed through the common duct. On October 1st she had another attack of biliary colic, accompanied by rapid pulse, high temperature, etc. This led Dr. Longe to believe that the patient had an obstruction in the common duct, and prompted him, October 6th, notwithstanding that at this time the condition of the patient was nearly hopeless, to attempt another operation.

On opening the common duct no stone was found, in spite of most careful search, but a cicatricial contraction was felt at the point of entrance into the duodenum. A new opening was made into the gut, and the common duct was opened and stitched to it. The patient rallied from the operation much better than was anticipated, and during five days everything went well, when, upon removing the tampon, the suture line was found to leak, and the duodenal contents to escape through the wound. This was overcome by persistently keeping the patient on her left side, and skilful tamponing. Under this treatment the patient improved rapidly and made an uneventful recovery, returning to Syracuse in December with but a small fistula into the gall-bladder, which soon healed.

This case presents some very unusual and interesting features: first, the history of febrile disturbance, with pain, five months prior to the obstruction of the common duct in August, at which time I believe there was duodenal ulceration near the opening of the common duct, with accompanying cholangitis. This terminated in recovery, but left a cicatricial contraction of the common duct; second, the small calculus which doubtless would have passed through the common duct during one of the attacks mentioned had it not been for the cicatricial contraction at its outlet. The stone acted as an irritating foreign body and caused empyema of the gall-bladder. This would have continued no doubt until perforation or until the patient died from exhaustion.

MEDICAL PROGRESS.

Hernia in Hebrew Soldiers.—SLOOMKA (*Centralbl. f. Chir.*, February 25, 1899) quotes the statistics which were gathered in the Russian army in order to determine whether hernia occurred more frequently in one race than another. It had been said that the Hebrews brought on hernia oftentimes in order to avoid military duty. The statistics showed that among the Russians 1 man in every 250 had to be rejected on account of hernia; 1 in 200 among the Poles; 1 in 175 among the Germans, while among the Hebrews 1 in every 35 had to be rejected on this account. The writer admits that the Hebrews were of slighter build than the others, but he does not attempt to explain the great discrepancy between the figures as given.

The Etiology of Seasickness.—DARNALL (*Jour. Amer. Med. Asso.*, March 11, 1899) explains seasickness as the overstimulation of some portion of the sensitive mu-

cous membrane lining the semicircular canals. Most of the disagreeable sensations in the body are produced by overstimulation of some one of the special senses. Too much light hurts the eye; too loud noise the ear; too rough handling the nerves of touch, etc. Hence too strong, or too-long-continued motion in a given direction hurts the membrane of some part of the semicircular canals, and by well-known reflex action, headache or nausea results. Naturally but little relief from seasickness may be expected as long as treatment is directed toward the stomach. Attention should be turned to the nervous condition of excitability.

The Carcinomatous Nature of Malignant Growths Arising from Pigmented Moles.—GILCHRIST (*Jour. Cutan. and Genito-Ur. Dis.*, March, 1899) contributes from the pathological laboratory of the Johns Hopkins University a study of the histogenesis of pigmented moles, with a report of two cases of malignant new growth arising from them. Such tumors have long been regarded as sarcomatous, but Gilchrist's study confirms the view of Unna, that these growths are epithelial and should be properly placed among the carcinomata. One of the two cases of melanocarcinoma described occurred in a negro. The patient was a man fifty-eight years of age, who presented eighty-seven metastatic tumors, scattered over the entire body surface. The primary growth was a pigmented nodule in the sole of the right foot, which had appeared four years before, and recurred after excision. The smaller nodules were freely movable beneath the skin. There was no enlargement of the lymphatic glands. The patient was put on hypodermic injections of Fowler's solution in increasing doses, but death occurred eight months later. The second case was one of single primary pigmented new-growth of the face, originating in a small pigmented mole. Thorough excision was performed. Microscopic examination of prepared sections showed all stages of commencing malignant downward growth of the cells of the epidermis, with accompanying excessive increase in the production of pigment, demonstrating beyond a doubt that the growth was of epidermal origin, and properly a melanotic carcinoma.

A study of pigmented moles excised from five other individuals showed that masses of epithelial cells becoming detached from the epidermis, go to form the structure of the mole itself. Since the cells which make the structure of the mole are of epidermal origin, any malignant growth springing from the cells should be regarded as carcinoma and not sarcoma.

Splenic Anemia.—ALFRED COLES (*The Blood*, London, 1898) gives splenic anemia a definite position among diseases of the blood. The disease has hitherto received indifferent recognition, and its literature is scant. Coles describes splenic anemia as characterized by marked increase in the size of the spleen, progressive anemia, an absence of leucocytosis, and a similar absence of enlargement of the lymphatic glands. Such a definition excludes leucemia on the one hand, and the ordinary

forms of Hodgkin's disease on the other. The disease may be characterized in addition by attacks of colic-like pain in the left hypochondrium, nausea, vomiting, and diarrhea. These occur in paroxysms, and are generally followed by a shorter or longer interval in which the patient feels comparatively well. The spleen is invariably enlarged, and may reach the level of the iliac crests. It is uniformly increased in size, and its shape is unaltered. The liver may be normal or may be enlarged. There may be jaundice. Epistaxis may be an early and prominent symptom. Splenic anemia is distinguished from Hodgkin's disease by the entire absence of any enlargement of the lymphatic glands. The examination of the blood is not pathognomonic. The changes in the blood may be similar to those in Hodgkin's disease. On the other hand, the blood examination is important, as the disease cannot be differentiated from leucemia without it. The red blood-corpuscles frequently fall to two and one-half million per c.mm., and may be further reduced. Microcytes may be present. Hemoglobin is reduced to a much greater degree relatively, and accordingly the color-index of the individual corpuscles is very low, even as low as thirteen per cent. The leucocytes are usually normal in number, and no characteristic changes in the differential count are described. Splenic anemia progresses to a fatal termination in from six months to two years. Its early differentiation from other pathological blood conditions is important in view of treatment. Splenectomy has resulted in cure in three cases of splenic anemia. This operation is almost invariably followed by death in leucemia.

Artificial Eyeballs.—SNELLEN, Professor of Ophthalmology in the University of Utrecht (*Ophthalmic Rev.*, December, 1898) reports his modification of the shell-shaped artificial eyeball, which he considers of advantage, in that the cavity behind the shell is done away with, and the mobility of the artificial eye increased. His device is a double shell of hollow glass, especially designed, where simple enucleation has been performed, to obliterate the cavity and prevent the wounding of the soft tissues behind by the thin edges of the single glass shell. This double-walled shell is fitted to the small stump remaining after evisceration by a concave posterior surface. When the conjunctival sac is emptied an artificial eye-globe with a plane posterior surface is used. The original hollow eye-shell is retained for cases of atrophic eyeball.

Rupture of the Uterus; Child Saved by Post-Mortem Section.—KENDALL (*Ann. of Gynec. and Pediat.*, March, 1899) reports two cases of rupture of the uterus in which after the death of the mother the life of the child was evident from its motions in the abdominal cavity. The abdominal wall was, therefore, slit up, and the child extracted. One of the children died in a few minutes, but the other was saved, a finely formed boy, weighing ten and one-half pounds. The mother was a primipara, only eighteen years of age.

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SATURDAY, APRIL 29, 1899.

IS SANARELLI'S BACILLUS ICTEROIDES THE CAUSE OF YELLOW FEVER?

As the warm weather and rainy season of the first year of our possession of Cuba and Puerto Rico approach, interest in everything that concerns yellow fever is redoubled. In our department of "Scientific Jottings from Tropical Countries" we recently published an abstract of some recent opinions advanced by Sanarelli himself. Further study has only convinced him more surely that his bacillus icteroides is the true and only cause of yellow fever. He has found that it has a special symbiotic favoritism for molds, that it grows by preference and more luxuriantly in the presence of molds than when alone. This symbiosis of micro-organisms, analogous somewhat to parasitism in larger organisms, is not a new biological fact. It is of extreme interest in this case, however, as it seems to explain the preference yellow fever has for the sea-shore and vessels and docks where the constant dampness causes molds to grow with special luxuriance.

We publish this week a preliminary note from Drs. Reed and Carroll, who have been investigating, in the laboratories at Washington, the

specificity of the bacillus icteroides (Sanarelli) and especially its relations to the bacillus α described by Sternberg some years ago in his investigations of yellow fever in Cuba. Sternberg, however, did not pronounce the bacillus α the cause of the disease.

Drs. Reed and Carroll do not consider Sanarelli's bacillus to be the specific germ of yellow fever. It is not the same as Sternberg's bacillus α which is probably a form of the colon bacillus but it has so many points of similarity with the bacillus of hog cholera that these observers think it to be only a variety of that micro-organism.

There the question must remain awaiting further investigation. Certainly these last observers seem to have studied the question very carefully before announcing their conclusion. The impression has, we think, been gaining ground generally in bacteriological circles that Sanarelli's bacillus icteroides has been accepted too hastily, especially in certain European countries, as specifically pathogenic of yellow fever. The enthusiasm was not so marked in this country, while in Germany the supposed discovery attracted very little attention. The Germans are, to be sure, not much interested in yellow fever but, even after careful consideration, Sanarelli's investigations were not considered so definitely conclusive as to put the question of specific pathogenesis beyond reasonable doubt. There remains open for ambitious American bacteriologists a very interesting problem of etiology whose study the United States' possession of Cuba and Puerto Rico will greatly facilitate and whose importance can scarcely be overestimated. Any discoveries in this matter will confer lasting fame upon the investigators.

THE NEW DISPENSARY LAW OF NEW YORK.

AFTER having passed the Senate and Assembly almost without a dissenting vote, the bill, amending the State Charities law, relative to the licensing and regulating of dispensaries by the State Board of Charities was signed by Governor Roosevelt on April 18th and will go into effect on the first day of next October. The text of the bill will be found elsewhere in this issue.

The enactment of this law marks the culmination of years of conscientious effort, and too much praise for this successful issue cannot be bestowed on those having the matter in charge. The gross mismanage-

ment of dispensaries in this city has been a public scandal for a generation or more, the apparent object of many of them being to treat annually as many applicants as possible without regard to their worthiness. Carefully compiled statistics have shown that during the year 1897 one-fourth of the population of the City of New York received free treatment at the dispensaries. It is more than probable that this total could have been divided by six if proper investigation had been made of the claims of the applicants and measures taken in accordance with the findings. Unwillingness on the part of managers to institute reforms, of their own accord, and thus harmonize their work with the growing public conscience and trend of opinion made legislative enactment imperative.

The bill which has just become a law is the same, with a few unimportant modifications, as that which was introduced during last year's session of the Legislature, and which failed to be reported back from the committee to which it was referred. The State Board of Charities, while possessing the power to issue licenses and nominally to regulate the management of dispensaries of the State, has never, until now, had conferred on it authority to discipline any institution which failed to conduct its operations in accordance with the board's requirements. The result has been that its suggestions or recommendations in this connection have uniformly been ignored. It has repeatedly urged legislation looking toward the correction of this defect, but without satisfactory result. The new law confers upon the board the desired power, subject to certain restrictions, and there is every reason to suppose that it will be exercised along such lines as will prove fairest and to the best interests of all concerned.

Unless we mistake not this is the first instance in which it has been declared, by any law making body, to be a misdemeanor, punishable by a fine, for any person to obtain free medical or surgical treatment at a dispensary under false representations. While the law will in no wise limit or prevent deserving persons from receiving such treatment, but, on the contrary, will increase the facility with which they may obtain it, it will serve to effectually bar all unworthy applicants from participating in the benefits to which they have neither moral nor legal right. The crowds of well-dressed people which are accus-

tomed to throng the waiting rooms of the dispensaries to the exclusion of the needy poor will be greatly diminished or will disappear and the young dispensary doctor will have less to do, but the direct result will be the withdrawal of tacit encouragement toward pauperism, the inculcation of a proper spirit of self-respect in the worthy other half whose necessities compel recourse to charitable aid, and finally, will redound both to the welfare of the community at large and of the profession.

SECOND ATTACKS OF THE INFECTIOUS FEVERS.

It is becoming more and more certain, now that medical statistics are being kept with greater exactness, that second attacks of the infectious fevers are not so rare as was formerly thought. It is especially worth noting because the old idea, that one attack of a specific disease gave almost assured immunity from a second attack, sometimes led people to take insufficient prophylactic precautions when exposed to the disease for a second time. Even physicians permitted such exposure or protested but slightly against it. In the ordinary infectious diseases of childhood, it is now definitely known that second attacks are by no means rare, in fact are so common that no assurance of the existence of immunity in any given case is justifiable.

The subject has recently interested Professor Gerhardt of Berlin, who, besides being a distinguished general clinician, is the well-known editor of a standard German work on children's diseases. He has carefully collated the personal experience of his own medical students in scarlet fever and measles during a number of years. Taking their statements in connection with the statistics gathered from his hospital and private patients he is able to announce the following opinion: Of ordinary healthy young men about 20 per cent. have not had scarlet fever; about 1 per cent. of them have had two attacks and 10 per cent. of scarlet-fever patients, who have passed the period of youth, are experiencing their second attacks of the disease. As regards measles, about 6 per cent. of young men in the third decade of life have not had the disease, about 2 per cent. have had repeated attacks, while of the young men of this age who acquire measles about 13.5 per cent.

have had the disease previously. One of Gerhardt's students had had seven distinct attacks of measles.

Gerhardt's experience is not an unusual one. In "Progressive Medicine" Dr. Blackader quotes Feltz, who reported from Vienna certain undoubted cases of relapse of measles within a month after the first attack. He also cites Emmet, who has had a similar experience. He has observed altogether 122 cases of second attacks of measles occurring at varying intervals. There are a number of American authorities on children's diseases who have been calling attention to this feature. The subject is deserving of careful investigation and in this matter the statistics of a large number of general practitioners would be of great value. We should be glad to be able to contribute to the further elucidation of this important question by the publication of the personal experience of men whose large numbers of cases in family practice will undoubtedly throw conclusive light on the subject.

PROPHYLAXIS AND TREATMENT OF INTESTINAL OBSTRUCTION.

THE last number of *Schmidt's Jahrbücher* contains a review of some interesting contributions to this important subject. Professor Heidenhain, in discussing the cases that have come under observation in the clinic at Greifswald during the past few years, maintains that clinical experience absolutely demonstrates that intestinal obstruction may be in some cases the result of a purely functional disturbance of intestinal peristalsis. In three cases a spastically contracted portion of small intestine was found at operation as the cause of the acute symptoms. The serious disturbance of peristalsis had been brought about in one case by a stricture of the rectum high up, in a second by a volvulus involving the large intestine at the sigmoid flexure, in the third by the presence of a roundworm.

In cases in which any chronic disease of the intestine exists every possible precaution should be taken to avoid disturbing the already irritated peristalsis by anything calculated to produce additional reflex excitation. Only the most bland food should be permitted and every excess strenuously prohibited. Acute intestinal obstruction from bunches of roundworms knotted together have been noted before but now for the first time the direct ir-

ritation, due to the presence of a single worm, has been reported as causing sufficient spastic interference with peristalsis to set up acute obstructive symptoms.

Three patients in whom complete intestinal obstruction was diagnosed were relieved by high injections. Under these circumstances doubt still remains whether the condition was due to any of the ordinary serious causes of true obstruction or was occasioned by an extreme degree of coprosthesis. Heidenhain thinks that obstruction due to ileus at the sigmoid flexure, a not infrequent condition, may be relieved by injections. Not, however, if the twist of the gut is more than 270° . Operation for this condition, followed by fixation of the intestine has given excellent results in Heidenhain's hands.

An interesting commentary on Professor Heidenhain's success with high injections in certain cases of acute obstruction is found in the report of Dr. Barker's experience with fifteen such cases. In six cases he succeeded in reducing the intussusception by water or air injections. The tumor so changed its character on palpation that no doubt of the reduction seemed possible. In every case, however, it recurred, in a few hours could be felt as before, and necessitated operative interference. Of the fifteen patients ten recovered. Eleven of the patients were children under sixteen months of age, one was an adult, aged thirty-two; the others were children, aged respectively, four, five, and twelve years.

While injections of air and water still have a place in the therapeutics of obstruction they must evidently not be allowed seriously to delay surgical procedures which are always to be thought of at once. In intussusception in children where it was hoped injections would be effectual they have proved of doubtful utility and may only make the eventual prognosis worse by delay. It is clear, however, that as diagnosis becomes more exact operations are undertaken earlier, and the percentage mortality from acute intestinal obstruction is ceasing to be the opprobrium to modern surgery that it formerly was.

SUGGESTIVE DISCUSSION ON MALARIA.

THE recent discussion on malaria at the New York Academy of Medicine, the last instalment of which we publish this week, brings out very well the last and best medical opinions on this interesting

subject. So much convincing material with regard to the mosquito-borne theory of the disease has accumulated during the last year or two that even the most conservative medical men must be ready to adopt opinions not unfavorable to it at least. The observations made by English and American investigators regarding hematozoic parasites, in general, have been confirmed by Italian students in respect to the parasite of human malaria, in particular.

Hereafter, practical prophylaxis of the disease and the problem of public health in malarious districts must include the study of the mosquitoes of the neighborhood and the adoption of means for the prevention of their multiplication. A very interesting set of observations that should occupy attention all over the country will have reference to the possibility of the introduction of malaria, by returning soldiers, into parts of the country hitherto unaffected by the disease. Many of them have acquired in their Southern and Cuban experiences chronic forms of malaria which may run an almost latent course, though their blood still contains at times some of the malarial parasites. Malaria has been known to develop *de novo* in a hitherto virgin vicinity under such circumstances, so that careful observation may be rewarded by some facts of great value to the present theories of the etiology of the disease.

Dr. Ewing's announcement that he had seen in one case, and had good grounds for suspecting in others, the transformation of the estivo-autumnal type of malaria into the tertian, is somewhat startling just now when most of us had settled down to the views promulgated by Italian observers that malarial parasites are multiple in species. It is in accord with the present trend of thought on the subject, however, and should open some suggestive lines of investigation for those who have many of the returned soldiers under observation. The careful study of any malarial parasites that may be found in the blood of such patients can serve the very useful purpose of confirming or disproving this opinion of the occurrence of transitional forms, or of an absolute transformation of one form of parasite into another. The idea of such a metamorphosis is not absolutely new. Its possibility under the very different conditions that prevail in the tropical climate where the disease was acquired and the temperate climate in

which the men have since lived seems very plausible. Painstaking American medical men have an excellent opportunity under the circumstances to add some very pregnant facts to the scientific as well as the clinical aspects of malaria.

ECHOES AND NEWS.

Health Department to Move.—The New York City Health Department will move from its present quarters in the Criminal Court Building to the building formerly occupied by the New York Athletic Club at Fifty-fifth street and Sixth avenue.

Buried Many Fathoms Deep.—Dr. Bachmann, the physician of the German deep-sea expedition, died suddenly on January 14th, and his body was lowered in the deepest place so far sounded by the expedition—5733 meters—near the Kakos Islands.

Non-Alpine Sanatoria for Consumptives.—The results in non-Alpine sanatoria of Germany have been sufficiently good to warrant the insurance companies in the country in paying between three and four million marks in 1898 for the erection and maintenance of such sanatoria for the people.

Publications in the Lay Press by Dr. Schenk.—There seems to be a general feeling of satisfaction in the medical profession of America over the announcement that the Vienna Academy of Medicine has decided to discipline Dr. Schenk for having made known his alleged discovery concerning the production of sex at will through the medium of the lay, in place of the medical, press.

International Congress of Life-Insurance Examiners.—The first International Congress of doctors connected with life insurance will be held at Brussels, September 25 to 30, 1899. Representatives from all the civilized countries of the world are expected to be present. An effort will be made at this Congress to establish universal formulas for the examination of applicants for life insurance.

The Psychic Study Society.—Among the stated objects of the Psychic Study Society, which was organized on April 20th in New York City, are, "the study of hypnotism and mesmerism and an inquiry into the alleged phenomena of clairvoyance, somnambulism, thought transference, and all matters of kindred nature, and the careful investigation of any reports resting on strong testimony of alleged apparitions occurring at the moment of death or otherwise," etc. A number of physicians are members.

Tuberculosis Hospital for the United States Marine Hospital Service.—By order of President McKinley, Fort Stanton, an abandoned military reservation in New Mexico, containing about 10,240 acres of land with the buildings thereon, has been transferred to the Marine Hospital Service for the care and treatment of cases of

tuberculosis coming under its jurisdiction. Preparations will be immediately made for its occupancy by the Service, and the buildings will be put in order for the reception of patients.

Increase of Attendance at the Medical School of the University of Paris.—According to the report of the council of the University of Paris the following is the comparative attendance at intervals of 6 years for the last 15 years. In 1885-86 there were 3696 medical students, in 1891-92, 4111; in 1897-98, 4494. During the same period the number of students in the law department has increased from 3786 in 1885 to 4607 last year. The number of students of pharmacy has remained about stationary, while the number devoting themselves to science has more than tripled, from some 400 to over 1300.

New York City Appropriations for Hospitals.—On April 2d Governor Roosevelt signed a bill empowering the New York City Board of Estimate and Apportionment to appropriate annually sums of money to any charitable, eleemosynary, correctional or reformatory institution, wholly or partly under private control, for the care and maintenance of its inmates. Payments are to be made only for such inmates as are received and retained therein pursuant to rules established by the State Board of Charities. The board may increase or diminish the sum now authorized to be paid annually to any such institution, association, corporation or society.

A Declining Birth-rate—An Increasing Marriage-rate in England.—The *Medical Press and Circular* of London calls attention to the fact that while the birth-rate in England has been steadily decreasing for some years the marriage-rate has been almost as steadily increasing. Our contemporary says that it offers no explanation of the fact, but that it evidently cannot be explained on any ordinary natural grounds. In the jubilee year, 1897, the marriage-rate touched the highest figure ever known in England—namely 16.0 per cent., but while in 1897 more persons entered upon matrimony than had ever been known up to the present time, during the next year, 1898, less births were recorded than during any corresponding period, at least in the last ten years.

Tenth International Congress of Hygiene.—It will be remembered that the last session of this congress was held at Madrid just before the breaking out of the late war with Spain. The next one is to be held at Paris, in August, 1900. The proceedings will be conducted in seven sections: (1) Microbiology and parasitology as applied to hygiene. Of this section Laveran is president and Netter, secretary. This section also will discuss the etiology of intestinal helminthiasis. (2) Chemical and veterinary science as applied to hygiene. (3) Hygienic engineering and architecture. (4) Personal hygiene. (5) Industrial and professional hygiene. (6) Military, naval, and colonial hygiene, and (7) General and international hygiene.

Still Another Medical Martyr.—Dr. Angelo Knorr, privat-docent in the veterinary department of the University of Munich in Bavaria, died last month from acute gland-

ders. The disease occurred as the result of an inoculation during the course of some experimental studies on mallein, the toxin produced by the bacillus of the disease. Glanders is mainly an animal disease, seldom affecting human beings, and the studies on it were undertaken entirely for the purpose of preventing animal-suffering. When the cry goes up from rabid antivivisectioners of the awful suffering inflicted upon animals in the laboratories of Europe, do they ever think of the numbers of young men who are ready and willing to risk health and even life itself in the study of the diseases of animals, in order to prevent suffering among them?

Mississippi Valley Medical Association.—The Executive Committee and the Committee of Arrangements of the Association have changed the date of the next meeting in Chicago, from September 12th-15th to October 3d-6th inclusive. The Autumn Fête to be known as the American Festival will be held in Chicago, beginning September 25th and ending October 9th with the laying of the corner-stone of the Federal building, when the President and the Cabinet will be in the city. During this time the railroad fare to Chicago from all points will be a one-fare rate for the round trip, without the necessity of certificates or signatures. The limit of the tickets is so long that a protracted stay can be made in Chicago in order to take advantage of the clinical facilities of the meeting as well as enjoy the added attractions of the Festival.

The First Woman Teacher of Medicine in Paris.—Mlle. Edwardes Pilliet, M.D., has just been appointed by the Department de l'Assistance Publique of Paris an instructor in certain medical branches. She is to lecture on physiology to the nurses at the Hôpital Lariboisière, and to give instruction in bandaging to the attendants at La Salpêtrière. These positions are not in connection with the medical department of the University of Paris, but with the training schools for nurses connected with the Department of Public Charity. Mlle. Edwardes Pilliet is the first woman to be accorded the honor of a teaching position in this department. It is safe to predict, however, that the time is not far distant when in Paris, under the auspices of the University of Paris itself, as in Bologna of yore, women will lecture publicly on medical subjects.

Wire-Pulling Extraordinary over a Dispensary Position.—The following story from the *British Medical Journal* of April 1, 1899, will serve to show that some of the profession across the water can give even American medical politicians points in wire-pulling for positions. The office of medical attendant at a dispensary not far from Dublin was vacant. The vote for the new incumbent it was rumored would be a tie. The evening before the election meeting one of the members of the board received a telegram saying that his country seat in the West of Ireland was on fire and asking him to come at once. He did so by the night express, but found everything safe and peaceful on his estate. When he returned the election was over. The board is now investigating the affair. Of course the elected candidate knows nothing about the telegram. He was of the opinion that the man so sud-

denly called away would have voted for him. All that is wanted now is some lapses of memory when the time for taking testimony arrives, and the whole thing will wear a wonderfully familiar air.

Yale Asks for \$2,000,000.—The Bicentennial Committee of the alumni of Yale University has just published an address asking that \$2,000,000 be contributed for University purposes in honor of the two hundredth anniversary of the institution, which will be celebrated in 1901. Of this sum \$225,000 has been subscribed and without condition. Among the objects for which the money is to be expended we note these items of special interest to medical men: fund for instruction and scholarships in the Sheffield Scientific School, \$250,000; biological laboratory, \$150,000; instruction and scholarships in the Department of Medicine, \$200,000; clinical building and Pathological Institute, \$100,000; University Library, \$200,000. If the present appeal proves successful and the enthusiasm amid which it has been proposed, the energy and promptness with which the matter has been taken up, and the proverbial willingness of the "Yale spirit" would seem to be an earnest of this, there is every reason to believe that a great medical department worthy of Yale University will flourish within the next ten years amid the classic shades of New Haven.

The Late Dr. W. W. Van Arsdale.—The following memorial notice was adopted by the New York County Medical Association at its stated meeting on April 17th and ordered published in the medical journals: *Resolved*, That in the death of Dr. W. W. Van Arsdale the New York County Medical Association has lost one of its most accomplished members. In addition to a thorough academic education, Dr. Van Arsdale passed successfully through the long course of study required at the University of Leipsic in Germany, from which institution he graduated with honors, and afterward served the required term of service in the great hospital of that city as pupil of, and assistant to, the distinguished Professor Thiersch. Returning to his native country he located in New York City, became connected as an assistant to the chair of surgery in the New York Polyclinic Medical School and Hospital in the early days of its organization, and served with such faithfulness and proficiency that he gradually rose to the professorship of surgery, which position he filled with entire satisfaction and held at the time of his lamented death. He was also assistant surgeon to the New York Cancer Hospital. For four years before his death he had been assistant visiting surgeon to Mount Sinai Hospital, where his conscientious and thoroughly scientific work was fully appreciated, and where his loss will be keenly felt. Dr. Van Arsdale was twice elected chairman of the Section on Surgery in the New York Academy of Medicine, and was an earnest working member of the New York Surgical Society. He contributed many valuable papers upon scientific subjects to the various medical journals, and was justly considered one of the clearest writers of his day upon surgical topics. *Committee:* John A. Wyeth, M.D., Chairman; Francis J. Quinlan, M.D.; A. Ernest Gallant, M.D.

New York's New Dispensary Law.—The following is the text of the Dispensary bill which was signed by Governor Roosevelt on April 18th last: "Section 1. Article one of chapter five hundred and forty-six of the laws of eighteen hundred and ninety-six, entitled 'An act relating to State charities, constituting chapter twenty-six of the general laws,' is hereby amended by inserting at the end thereof the following sections: Sec. 19. What is a dispensary?—For the purposes of this act, a dispensary is declared to be any person, corporation, institution, association, or agent, whose purpose it is, either independently or in connection with any other purpose, to furnish, at any place or places, to persons non-resident therein, either gratuitously or for a compensation determined without reference to the value of the thing furnished medical or surgical advice or treatment, medicine or apparatus provided, however, that the moneys used by and for the purposes of said dispensary shall be derived wholly or in part from trust funds, public moneys, or sources other than the individuals constituting said dispensary and the persons actually engaged in the distribution of charities of said dispensary. Sec. 20. Licensing of dispensaries by the State Board of Charities.—A license may be issued by the State Board of Charities to a dispensary, as provided in this section. An application in writing for such license shall be made to such board in the form and manner prescribed by it, which shall be uniform for all schools of medicine. There shall be attached to such application a statement, verified by the oath of the applicant, containing such facts as the board may require. If, in the judgment of such board, the statement filed, and other evidence submitted in relation to such application, indicate that the operations of such dispensary will be for the public benefit, a license shall be issued to the dispensary applying therefor. The form of such license shall be prescribed by the board. A dispensary shall not enter upon the execution, or continue the prosecution of its purpose unless licensed by the State Board of Charities, as provided in this act. A license shall be issued, on application, to all dispensaries legally incorporated, and to unincorporated dispensaries conducted in connection with incorporated institutions at the time of the passage of this act. Sec. 21. Rules and regulations.—The State Board of Charities shall make rules and regulations, and alter or amend the same, in accordance with which all dispensaries shall furnish and applicants obtain medical or surgical relief, advice or treatment, medicine or apparatus. But such rules and regulations shall not in any case specify the particular school of medicine in accordance with which a dispensary shall manage or conduct its work or determine the kind of medical or surgical treatment to be provided by any dispensary. Sec. 22. Revocation of licenses.—The State Board of Charities or any of its members may at any and all times visit and inspect licensed dispensaries. They may examine all matters in relation to such dispensaries, and ascertain how far they are conducted in compliance with this law and the rules and regulations of the board. After due notice to a dispensary, and opportunity for it to be heard, the board may, if public interest demands,

and for just and reasonable cause, revoke a license by an order signed and attested by the president and secretary of the board. Such order shall state the reason for revoking such license, and shall take effect within such time after the service thereof upon the dispensary as the board shall determine. The said board is hereby directed to apply to the supreme court to revoke the license and annul the incorporation of any dispensary legally incorporated, or conducted in connection with an incorporated institution at the time of the passage of this act, for wilful violation of the rules and regulations made by said board. Sec. 23. Drug-store or tenement-house not to be used by dispensary; unlawful display of signs.—After the taking effect of this act, no dispensary shall make use of any place commonly known as a drug-store, or any place or building defined by law or by an ordinance of the board of health as a tenement-house; nor after such time shall any person, corporation, institution, society, association, or agent thereof, except a duly licensed dispensary, display or cause to be displayed a sign or other thing which could directly or indirectly or by suggestion indicate the existence of the equivalent, in purpose and effect, of a dispensary. Sec. 24. Any person who wilfully violates any of the provisions of this act, or any of the rules and regulations made and published under the authority of this act, shall be guilty of a misdemeanor, and on conviction thereof, shall be punished by a fine of not less than ten dollars and not more than two hundred and fifty dollars. Sec. 25. Any person who obtains medical or surgical treatment on false representations from any dispensary licensed under the provisions of this act shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine of not less than ten dollars and not more than two hundred and fifty dollars. Sec. 26. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed. Sec. 27. This act shall take effect on the first day of October, eighteen hundred and ninety-nine.

NOTABLE BOOKS.

**PRACTICAL HYGIENIC AND MEDICAL GUIDE
FOR THE UNACCLIMATED IN HOT COUN-
TRIES, AS CUBA, PUERTO RICO, AND
THE PHILIPPINES. BY FEDERICO
MONTALDO.**

THIS book was crowned by the Spanish Royal Academy of Medicine of Madrid just before the Spanish-American war was declared, and was recommended to prospective emigrants and colonists in the islands that have since passed under the jurisdiction of the United States. The recommendations it contains are strictly practical in character and evidently come from a man who has himself had a large experience in the tropics, and who has seen and knows thoroughly the dangers to which the unacclimated colonists expose themselves, and how these dangers may be avoided. During the next few years most

¹ *Guía práctica, higiénica y médica del Europeo en los Países Torridos* (Filipinas, Cuba, Puerto Rico, etc.). Por Federico Montaldo. Madrid: Ricardo Rojas, 1898.

American medical men will probably have friends and patients who are about to set out for these countries, and as they will be consulted about the precautions necessary it has seemed opportune to review some of the practical suggestions Dr. Montaldo offers.

Before setting out for the tropics every one is advised to consult a physician and on no account to go without his approval. Absolute contraindications of removal to a tropical climate are chronic diseases of important organs, especially of the gastro-intestinal tract, the liver, or the kidneys. The heat and the change of diet it necessitates, with the introduction of unusual forms of bacteria are almost sure to cause a certain amount of dyspeptic and gastro-intestinal disturbance even in the most healthy subjects. In those whose resistive powers are already below par serious illness that will be fatal or become hopelessly chronic will probably supervene. In these changed conditions, instead of dissipating heat in order to keep the body temperature up, the vital forces must neutralize heat reception from without in order to keep the temperature down to the normal. This produces an alteration in metabolism, and throws an excess of unusual work upon the liver and the kidneys. Substances absorbed, and in temperate climates, simply burned up in order to furnish heat, must now be excreted. Serious and unusual calls are thus made upon the excretory functions of these important organs, and their resistive vitality is distinctly lowered. While in this state they are not infrequently called upon to excrete the toxins of certain infectious diseases so common in the tropics that no one can hope to entirely escape them. It is evident then, if the adoption of the new environment is to be successful, that these important organs must be unimpaired in their functional capacity.

The choice of season for emigration is of the greatest importance. There are in tropical climates practically only two seasons, the wet and the dry. The wet is much the more dangerous for the unacclimated, and it is advisable that the newcomer be prepared for it by several months of previous residence in the country so that much of the unusual shall have worn off. Time spent in waiting for the favorable moment to emigrate is not lost, but will be more than compensated for by time saved from restrained methods of life, or perchance, confinement to bed during acclimatization at an unfavorable season. England and Germany have issued formal advice to intending colonists in this matter and do not, unless from some serious necessity, send officials, civil or military, to tropical colonies during the wet season. This is a precaution which Spain, typically enough, despite her 400-years' possession of tropical colonies, as Montaldo points out, had never taken.

The constant dangers that threaten the unacclimated in tropical countries are, the heat, the sun, the changes of temperature which are quite different and much more marked than in temperate climates, the humidity, and malarial infection. The heat precludes the possibility of doing as much work as in a temperate climate, and to attempt it is to invite disaster. The intensity of the sun in its directness requires that the middle of the day shall be given

up to rest within doors. To brave the noonday sun is foolhardy beyond peradventure. The custom of the inhabitants in this matter of midday rest must be unquestionably adopted. A sudden fall of 30° or more of temperature during the night is not uncommon in the tropics. Humidity is a marked feature of all tropical climates. It interferes with cutaneous perspiration and other functions and calls for special care of the skin, frequent bathing, warm as well as cool, and brisk rubbing in order to keep the skin functions at their acme of availability. For malaria quinin must be taken as a prophylactic in doses of 5 grains or more according to individual susceptibility.

The temptation in tropical climates is always to drink too much and too frequently. This but increases the perspiration, adds to the discomfort and relieves the thirst only for the moment. Alcoholic drinks should not be taken at all by the unacclimated, since they but add to the store, already too large, of heat-producing materials in the system. Water alone, especially if cold, will always be drunk to excess. Montaldo advises to mix it always with lemon- or orange-juice, or to take it in the form of weak tea or coffee. He recommends from personal experience that it should be taken slightly warmed. The temptation to take too much is not so apt to become irresistible, and besides when warm it seems to assuage the thirst better. Montaldo also advises to begin at once, on arriving in a tropical climate, the formation of the habit of not drinking between meals. He says it is easily acquired by a little force of will.

As to eating, much less is required of course than in a temperate climate, yet there is always the danger from old habits and the appetite that has been acquired by years of plenteous indulgence in a variety of food. Foreigners in the tropics always eat too much, especially too much meat, and this is one of the main factors in their liability to gastro-intestinal, hepatic, and renal disease.

For clothing, light-weight, and light-colored, loosely woven flannel is recommended. It should be covered with some other garment whenever it becomes damp from perspiration to avoid the constant evaporation which abstracts too much heat from the cutaneous surface, disturbs the visceral circulation, and so gives the opportunity for an infective agent that may be present to secure a foothold in the tissues.

With regard to venereal indulgence there is a special word of warning. The old habits of internal-heat production, so necessary for obvious protective purposes in a temperate climate, are retained by the organism during its preliminary period of acclimatization, even though not needed in the tropics. The genital sphere especially bears the brunt of the increased tissue metabolism that this involves, and besides the relaxation incident to the tropics prevents a normal amount of exercise and so discourages the working off of surplus energy by physical means. The result is a greatly heightened unaccustomed *nixus generativus*. Excesses in venery, however, are especially trying to the unacclimated, and yet the character of the women of the tropics is apt to be such that opportunities are not wanting for the satisfaction of pas-

sion. It is this matter that forms, according to Montaldo, one of the most frequent sources of unhealthiness on the part of immigrants to tropical countries. Of course a word is added as to the great frequency of venereal disease in these countries owing to promiscuous intercourse.

CORRESPONDENCE.

APPENDICITIS AND TERMINOLOGY.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—I trust to your generosity to allow me to say that I have not been quoted quite correctly in the issue of your most excellent journal for April 22d, where you honor me in giving a report of my paper "The Term Appendicitis and Other Unscientific Words in Our Nomenclature," and further, that the object of my remarks has been overlooked in your editorial on the subject. Neither my insignificant self nor even a single much better man can change at will the habit of employing unscientific, incorrect, and sometimes directly *misleading* terms. If the whole profession will adhere to *appendicitis*, *habeat sibi!* If there are people who insist on "*per orem*," *habeant!* So much the worse for the profession, so much the worse for those men. I confined myself to positive facts and no more and no less, and I leave it to the profession at large, not to the German Medical Society of the City of New York alone, to judge of the correctness and the value of my positive statements. Allow me here to add that I have already conclusive evidence that my labors are being noticed favorably by many good men, by some of the best men of our profession. It happens sometimes that the contrary of what we say is reported. I have not said that the term "*scolicoiditis*" might be adopted by our Greek colleges. I stated that this word is the exact translation of our word *appendicitis*, but that the Greeks employed it rarely. I am not guilty of having coined a new impossibility "*nosogeny*" as I am quoted with, and I have not said that *skolex* is the term for appendix. I wonder what my Greek friends would think of me if I had done such awful things! As to one of Dr. Jacobi's remarks, who did me the honor to discuss my paper rather favorably, I gave the exact reasons why it is of importance to distinguish well between *nosology* and *pathology*, since these are two essentially different matters.

A. ROSE, M.D.

NEW YORK, April 22, 1899.

ANOTHER BIT OF NASAL SURGERY.

To the Editor of the MEDICAL NEWS.

DEAR SIR:—A strong parallel to your recent excerpt from the *Lancet*, entitled "An Interesting Bit of Nose Surgery," occurred in my practice a few years ago. A boy, aged six years, was looking down through a broken skylight when something suddenly attracted his attention; he turned sidewise and the sharp edge of the glass cut the tip of his nose off. Being summoned to see him, two blocks away, I inquired for the piece, which had dropped into the cellar. The father found it there and brought it;

time at least twenty minutes; size almost as large as a copper cent and about three millimeters in thickness. After aseptic cleansing and placing in correct position I fastened the piece by laying over it a thin film of cotton soaked in aristol collodion. Healing was by primary intention. The piece remained redder than the rest of the nose for a couple of years but looks now almost natural.

A still more striking success I have obtained with a finger. A waiter from a hotel next door came into my office, having chopped off one-third of the last phalanx of the left index-finger with a sharp bread-knife. I sent his companion for the piece, which he found on the table. The larger part of the nail and a piece of bone were in place. After trimming the nail I attached the piece in the same manner as the nose. For further protection a support projecting beyond the finger was fastened to the hand. Perfect union ensued but it required great care to remove the remnants of the nail without destroying the fresh attachment. I should advise in a similar case in future to remove the nail of the piece at once, although a man is naturally shy to handle the piece much, as the growing of the matrix pushes against the piece and has a tendency to force the piece off from the new union. Although I succeeded without stitches I have the feeling that a couple in the finger would have been wiser, as with all superadded hardening material a finger-tip cannot be held so quiet as a tip on the nose, where stitches are certainly undesirable.

M. HARTWIG, M.D.

BUFFALO, N. Y., April 20, 1899.

OUR PHILADELPHIA LETTER.

[From Our Special Correspondent.]

ACETO-SOLUBLE ALBUMIN—CHANGES IN THE RETINAL ARTERIES INDICATIVE OF GENERAL ARTERIAL DISEASE FROM THE OPHTHALMOSCOPIC STANDPOINT—THE NEW ALLENTOWN HOSPITAL—CHANGES IN THE BUREAU OF HEALTH—ELECTION OF THE NORTHAMPTON COUNTY MEDICAL SOCIETY—THE MEDICAL CLUB'S RECEPTION TO DRs. BULL AND COLEY—PERSONAL NOTES—OBITUARY—HEALTH STATISTICS.

PHILADELPHIA, April 25, 1899.

At a meeting of the Pathological Society, held April 13th, Dr. W. M. L. Coplin reported two interesting cases of aceto-soluble albumin in the urine, under the title of "Two Cases of Albuminuria, the Albumin Not Being Recognizable in the Acetic Acid and Boiling Test." In 1889, Pattein called attention to the occasional presence in the urine of a form of albumin which was precipitated upon boiling in the absence of acetic acid, but which, nevertheless, became resolved upon the addition of acetic acid, even in minute quantities, and if urine containing this form of albumin was rendered ever so faintly acid by the addition of acetic acid, the albumin failed to be precipitated upon boiling. Pattein also reported later that it was possible to convert serum-albumin into aceto-

soluble albumin by the addition of certain sodium salts and other means, and believed, therefore, that the serum-albumin enters the glomerulus as such, and is altered in its descent through the tubes. Two of the cases so far reported have been in eclamptic women, the second of whom had true albuminuria as well. A third case was that of a parturient, who had a large amount of true albumin in the urine, though she did not have eclampsia. In this case the aceto-soluble albumin appeared just before labor. Two cases have also been reported as occurring in males which would tend to preclude the idea of an intimate relationship between some condition of pregnancy, and the presence of this particular form of albumin. Dr. Coplin reported two cases of his own, the first of which occurred in a woman suffering from typhoid fever, who was pregnant also for the second time, the first labor having been normal in every particular. The albumin entirely disappeared later, and at no time were casts found in the urine. The second case was that of a child who was suffering from acute follicular tonsillitis. In both of these cases albumin could not be demonstrated by means of the *heat and acetic acid*, *overlying nitric acid*, nor by the *nitric-magnesian* test, but was proved to be present by the ferrocyanid of potassium with acetic acid test, and by Tapret's reagent, from which Dr. Coplin concludes that the boiling and acetic acid test, and the overlying nitric acid test, can not be depended upon in all cases.

At the same meeting Dr. de Schweinitz read a paper "Concerning the Changes in the Retinal Arteries Indicative of General Arterial Disease from the Ophthalmoscopic Standpoint," in which he called attention to the tortuous condition of the arteries, their alternate contraction and dilatation, and the whitish streaks about their walls. Stress was laid also upon the influence of arterial pressure on the venous blood streams where artery and vein cross one another, and the impeded venous circulation. Frequently an ophthalmoscopic manifestation is edema of the retina and retinal hemorrhages consequent upon this condition which has recently been called attention to by Marcus Gunn, and which is of great prognostic value according to Dr. de Schweinitz.

About May 1st the New Allentown Hospital will be formally opened to receive patients, of which it can accommodate about thirty. The necessary funds were largely raised by the Ladies' Auxiliary of Allentown, and the last Legislature appropriated \$5000 for its maintenance. The building is of granite and brick, equipped with the latest improvements in sanitary appliances, and the plans call for extensions which are to be made from time to time as need arises and money can be obtained.

The general expectation that there would be a "shake-up" in the Bureau of Health has been fulfilled, and four assistant-medical inspectors have been notified that their services will not be required after the first of next month. The \$4800 a year which is thus saved is to be utilized in paying the Chief of the Bureau a yearly salary of \$4000, which is the amount provided for under the reorganization. Members of the Board of Inspectors protest against this reduction in their number and say that as the

work now done is all they can well accomplish this reduction will mean more work than can be properly attended to with consequent deterioration in the measures taken for the protection of the city's health.

At the eleventh annual meeting of the Northampton County Medical Society, held at Easton, April 21st, the following officers were elected: President, Dr. Charles McIntyre, Easton; vice-presidents, Drs. J. O. Berlin of Bath, and D. H. Keller of Bangor; recording secretary, Dr. F. H. Erwin, Bethlehem; corresponding secretary, Dr. H. T. Edwards, South Bethlehem; treasurer, Dr. Amos Seip, Easton.

The Medical Club of Philadelphia gave a reception to Drs. William T. Bull and William B. Coley of New York at the Bellevue Hotel on Saturday night. Dr. Anders, the President, introduced the members and addresses were made by Drs. Bull, Coley, Keen, De Forrest Willard, and Rodman. Among those present were Drs. Hare, Musser, Guy Hinsdale, La Place, Burr, Montgomery, Judson Daland, and J. Chalmers Da Costa.

Dr. M. P. Ravenal will address the Associated Health Authorities of Gloucester County at their annual meeting to be held in Woodbury during May.

Major William H. Lambert, for the past several years President of the Department of Charities and Correction, has resigned as a member of the Department much to the regret of all who know him. The resignation, it is stated, was not due to political influence but to pressure of private business.

At the celebration of the Fiftieth Anniversary of the Lycoming County Medical Society, held last week, Drs. W. S. Forbes, H. A. Hare, and Thomas Mays delivered addresses. Dr. Osler of Johns Hopkins was also present and spoke.

Dr. J. William White has been appointed a member of the Board of Visitors to the Military Academy, West Point, for the year 1899.

The annual banquet of the Alumni Association of Jefferson Medical College will be held at the Art Club on May 15th; Dr. Orville Horwitz is Chairman of the Dinner Committee.

By the will of the late Mary Dwyer, \$3000 is left to the Sisters of St. Francis for a Dwyer bed in St. Agnes Hospital, and \$1000 to St. Mary's Hospital.

The Legislature has increased by \$25,000 the appropriation made to the University Hospital, and to Jefferson; the Medico-Chirurgical receives \$45,000 additional, which gives it a total of \$120,000 as against \$75,000 which the two former institutions receive.

Dr. Thomas W. Flanner, a graduate of the University of Pennsylvania, died last week at his home in Philadelphia, aged seventy-nine.

The total number of deaths occurring in Philadelphia during the week, ending April 22d, as reported at the Bureau of Health, was 505, of which number 122 occurred in children under 5 years of age. The total number of new cases of contagious disease was 337, reported as follows: Diphtheria, 53 cases, with 18 deaths; scarlet fever, 42 cases, with 1 death; typhoid fever, 242 cases, with 1 death.

OUR LONDON LETTER.

[From Our Special Correspondent.]

THE CANCER NUMBER OF "THE PRACTITIONER."—
RETIREMENT OF DR. SOPHIA JEX-BLAKE—STRUG-
GLE OF WOMEN DOCTORS—SINGULAR INFLUENZA-
LIKE EPIDEMIC AMONG DOGS—"POISON BY POST"
—PROPOSED MINISTER OF HEALTH—SANITARY
PROGRESS IN THE ANTIPODES.

LONDON, April 17, 1899.

THE prominent topic of the past week, both professional and lay has been the cancer problem, brought into bold relief by the interesting and striking "cancer-number" of *The Practitioner*. This symposium of the views of a number of experts from both sides of the Atlantic, each one treating a phase of the subject, to which he has devoted much thought, if not actually won fame in, is most timely and reflects much credit upon its enterprising organizer and editor, Mr. Malcolm Morris. Its effect upon public opinion and interest has been most marked, and appeals for the adequate endowment of laboratories for cancer research will hereafter not fall upon deaf ears.

The ablest and most impressive paper of the entire group is that by Dr. Roswell Park of Buffalo, on the "Nature and Causation of the Cancer Process," which was published simultaneously in the *MEDICAL NEWS*, and which has provoked much comment in the press. Dr. Arthur Newsholme discusses the oft-alleged increase of cancer in recent years, reaching the unexpected conclusion, after a very thorough examination of the vital statistics, that it is apparent and not real. The much larger number and proportion of deaths by cancer recorded, he regards as due chiefly to completer reports and greater accuracy of diagnosis. His conclusion contravenes what most of us have accepted almost as an axiom, yet he makes out a very strong case for his view, showing for instance, that the enormous diminution in the number of deaths from "unknown causes" is alone sufficient to account for a large proportion of the increase in cancer, allowing it its due percentage of these.

Dr. Alfred Haviland takes up the geographical distribution and reaffirms the oft-enunciated dictum, that the disease is most prevalent on clay soils, in low swampy districts, and depends largely upon fluctuations in the ground-water. But this, of course, lands him in the difficulty that modern agriculture and drainage have enormously diminished both the ground-water and its fluctuations, while he declares cancer to be increasing, a dilemma which he endeavors to escape from by alleging that drainage has in some mysterious manner increased the liability of river-valleys to floods and thus produce the retention-dampness conducive to cancer. Altogether the paper leaves one with the decided impression that nothing definite can yet be said in regard to the soil-proclivities of cancer.

Plimmer, after a brief review of the parasitic theory of cancer, relates in greater detail his own results, alluded to in my last letter. He found a yeast-organism in 95 per cent. of some 1200 cancers examined by him, and from its cultures succeeded in producing tumors in inoculated guin-

ea-pigs, after many trials. But as these so-called tumors took the form of abundant, translucent tubercles upon the peritoneum, in the liver, spleen and lungs (in fact ordinary yeast-tuberculosis), affected the connective tissues only, and proved fatal in from *thirteen to twenty days*, they could hardly be even remotely regarded as carcinoma, except by a pure bacteriologist.

Dr. Sophia Jex-Blake, Dean of the Edinburgh School of Medicine for Women, and one of the founders of the London Woman's Medical College, has just been tendered a farewell reception on the occasion of her retirement to her old home in Sussex. Dr. Blake was first attracted to medicine as a career while on a visit to America thirty-three years ago and studied for two years in Boston under Dr. Lucy Sewall. Then she returned to England, and apparently from sheer love of battle, determined to complete her education and secure a degree, at the same time vindicating the rights of her sex in this regard. Her plucky fight lasted eight years, but succeeded at last in 1876, when Parliament passed an Act formally enabling the colleges to admit women to their examinations. She began her campaign in London, but rebuffed there, moved upon Edinburgh, where, after being admitted on sufferance for four years, the little band of women-students were flatly refused their degree, and after an expensive lawsuit driven to fall back upon London. Here they at last succeeded in establishing the Women's School of Medicine, in 1874, which was formally recognized two years later.

But life had become too easy in London for such a born Alexander and, after only two years of inglorious peace, Dr. Blake returned to the siege of Edinburgh, where, after eight years of delightful war, she succeeded in planting the banner of the still flourishing School of Medicine for Women in the very heart of the citadel. Now, covered with honors and the spoils of victory, she is retiring at the early age of fifty-nine to the home of her girlhood, though one can scarcely help wondering what influence will be found in "Sleepy Sussex" antagonistic enough to make life worth living.

The death is announced of Dr. William Squire at the ripe old age of seventy-four. For some years past, withdrawn from active, professional life, Dr. Squire will be remembered by his admirable "Essays in Preventive Medicine," which many years ago laid the foundations of the science of epidemiology, and is still a classic work of reference. He also wrote the section on diphtheria in Reynold's "System of Medicine," and that upon the exanthemata, in "Quain's Dictionary."

A new and singular epidemic among dogs is reported by Professor Penberthy as extremely prevalent in various parts of England. Its onset is characterized by dulness, stiffness, vomiting, and thirst, quickly followed by severe, pulpy congestion of the mucous membranes of the mouth, going on to even gangrene of the gums and tongue. A similar condition is found post-mortem throughout the entire alimentary canal, and in some cases in the lungs. The disease is extremely fatal, nearly 60 per cent. of the cases ending in death in from six to ten days. Bacteriologic examination reveals no distinctive organism, nor can the disease be communicated to other dogs, even

by feeding them upon the viscera and stomach-contents of animals dead of the epidemic. The interesting feature is that Professor Penberthy regards it as analogous to a form of canine influenza.

The rôle of imitation or, in the fashionable terminology of the day, suggestion in crime is a curious one. For months past the papers here have been full of the sensational Cornish case in New York and "Poison by post" has become a familiar head-line. Now London has use for this on its own account, a young girl, Mary Ansdell, inmate of a home for the feeble-minded, having received a few weeks ago a cake by parcel-post, after eating which she fell ill and died with symptoms of irritant poisoning. Three of her little friends who had assisted were also made very sick, but not having eaten an "owner's share" recovered. After careful search the police succeeded in tracing the cake and letter accompanying it to the victim's elder sister, a girl of twenty-two, living in London as a servant. The chief link in the chain of evidence was the purchase by the wretched girl of several packages of a phosphorus-paste, put up as a rat-poison, this element being found in abundance in the stomach of the victim by the well-known toxicologist, Dr. Stevenson, chemist to the Home Office. For a long time motive seemed utterly lacking, but it was at last discovered that the depraved creature had taken out an insurance-policy upon her sister's life and apparently planned her cold-blooded murder for the magnificent reward of \$55.00. It is but charitable to hope that the feeble-mindedness will be shown to run all through that family, but the opportunity for getting rid of some of it, permanently, is too good to be let slip.

There is a strong movement on foot for the establishment of a Ministry of Health, with a seat in the Cabinet. The sanitary administration of the country has hitherto been in the hands of the Local Government Board, a body which has done some admirable work, but which is loaded with an immense amount of other business, lacks initiative and enterprise, and that sense of responsibility only to be developed in a department with a single head.

The honorary degree of M.A. has been conferred by the University of Cambridge upon Dr. Sims Woodhead, in view of his recent election to the chair of Pathology.

Things "do move" in Australia. One of the legislatures has just passed a bill directing physicians to report every case of tuberculosis which they are called to attend to the Board of Health, and, marvel of marvels, providing a fee of sixty cents for each notification! All milk-cows are to be tested with tuberculin and remuneration paid for those slaughtered, only in case the post-mortem shows the diagnosis to have been mistaken.

Cremation Increasing.—In 1898 there were 179 cremations in Gotha, 105 in Heidelberg, 98 in Hamburg, and 21 in Jena, an increase of 31 over the preceding year. At Woking in England the number of bodies cremated in 1897 was 173; in 1898 it was 240. Four other crematories have been built in England and Scotland in the past five years.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

REMOVAL OF HYDATID CYSTS OF LIVER AND LUNG—
INCISION AND DRAINAGE THE BEST OPERATION FOR
PANCREATIC CYSTS—AN IMPROVED METHOD OF
OPENING THE ANKLE-JOINT—AORTIC ANEURISM
CURED BY THE INTRODUCTION OF SILVER WIRE—
SUCCESSFUL OPERATIONS ON THE PYLORUS—RAD-
ICAL CURE OF INGUINAL HERNIA—FUNCTION OF
THE PERICARDIUM—MODERN VIEWS ON GOUT—
TUBERCULOSIS IN IRELAND.

AT the Clinical Society of London, March 10th, ROBINSON described the successful treatment of hydatid cysts of the liver and lung of a boy, aged six years. In each situation there was a single cyst, that in the liver holding about a pint, and that of the lung being as large as an orange. The two were removed at separate operations two months apart. In each instance the cyst was incised, its contents evacuated, and its lining membrane peeled out whole. The fibrous sac was not disturbed. The cavities were drained and healed readily. The cyst in the right lung was exposed by resection of a portion of the second rib anteriorly. For ten days afterward there was a high temperature and evidence of localized pneumonia, though there was no connection between the sac and the bronchi, nor any bloody expectoration or cough during or after the operation. The boy made a good recovery and was well when last heard from.

BARKER reported the successful treatment by incision and drainage of a pancreatic cyst holding three or four pints. The cyst made its appearance in a boy, aged fourteen years, after a fall some weeks previous. In a month's time after the operation the wound had entirely closed. Antiseptic drainage and not extirpation seemed to the speaker to be the proper treatment in such cases.

In this respect DORAN agreed with him. An accurate diagnosis is not always possible until the operation has been partly performed, and several surgeons have remarked after an extirpation, that had they known the origin of the cyst, they would not have attempted its removal. Even if a cyst is situated in the most favorable part of the pancreas, namely, in its tail, it may be necessary to tie either or both of the splenic vessels, surely a serious procedure.

LANGTON also advocated incision and drainage. He gave the details of a case in which a pancreatic cyst, also of traumatic origin, contained 9.5 pints of old blood.

LANE reported three cases treated by incision and drainage, in one of which the cyst was opened from the back.

LANE described an improved method of opening the ankle-joint in case of tuberculosis. Previously he divided all the structures around the joint except the internal lateral ligament, the tibialis posticus, and the flexor tendons of the toes. In spite of careful suture the tendons sometimes united imperfectly. Besides the transverse cutaneous incision, he now makes vertical incisions of sufficient length to enable him to expose the several tendons for a considerable distance. In the young infant he found he could expose the interior of the joint by di-

viding the peroneus tertius alone, as well as the external, anterior, and posterior ligaments, the other tendons being turned out of their sheaths and hooked aside. In older children he also divides the peroneus longus and tertius high up, cutting through muscular and tendinous fibers, securing larger and more vascular areas in accurate apposition, and keeping the sutured portion at a distance from the joint, and so minimizing infection of it. By this means the objections to the former operation were avoided without diminishing its thoroughness.

At the session of March 24th, LANGTON reported a case of aneurism of the abdominal aorta, successfully treated by the introduction of silver wire into the sac. The aneurism was in the epigastric region and was first noticed after the birth of the patient's child. It increased in size until three months later an exploratory laparotomy was performed. A trocar was thrust into the sac, and after its withdrawal five feet of silver wire were passed into it. There was not much hemorrhage. One year later there was a hard mass, much smaller than before operation, the thrill and bruit having disappeared. Six similar cases have been reported, four of the operations proving fatal.

MORISON showed a number of patients upon whom he had operated for pyloric obstruction. Pyloroplasty he had performed nineteen times for benign stricture without a death. In no instance was there a recurrence of the trouble. He began the incision an inch and a quarter above the pylorus and continued it clear through the pylorus. He passed his suture through all the coats of the viscus, suturing the longitudinal wound transversely. Five patients were presented from whom he had removed carcinomatous growths of the pyloric end of the stomach. All were much improved and none as yet showed any sign of recurrence. The periods of time since operation varied from six weeks to eighteen months. He considered the operation safer than gastro-enterostomy, and advocated it for all movable tumors, no matter whether large or small.

At the Medical Society, March 13th, LANGTON read a paper on the radical operation for inguinal hernia. He described four methods of procedure: (1) Reconstruction of the inguinal canal with transplantation of the vas deferens and its vessels to the upper angle of the incision so as to form a new inner ring; (2) operations in which the whole or part of the sac is utilized to form a pad or buffer within, or close to, the inner ring, so that the peritoneal fossa usually met with was converted by the boss into a convex buffer; (3) ligature of the sac close to the inner ring, its excision, and the reconstruction of the inguinal canal; (4) partial removal of the sac, its ligation and torsion, its withdrawal through the conjoined tendon, and the inner pillar of the external abdominal ring, and its retention in this situation by sutures. It was impossible to determine the exact method to be adopted until the parts were exposed and the conditions thoroughly examined, but he preferred and practised, whenever possible, the operation first described, with certain modifications. He used kangaroo tendon as a continuous, rather than an interrupted suture, the coaptation of the canal being

thereby made more complete. Drainage was rarely needed, only when hemorrhage had been profuse or when a cavity was left after a large hernia. In males between ten and fifteen years of age, especially when omentum presented, his practice was to drag down a considerable piece, returning it into the peritoneal cavity after securely ligaturing. Rest and recumbent position for a month is a most important element in the after-treatment. He expressed himself as opposed to operating upon children under six years of age, as they can usually be cured of their trouble by the use of a truss. In speaking of recurrence after operation, he said that the records of the City of London Truss Society showed that in the last six years 242 operated patients were treated for failure of the operation, from which it might be inferred that the total number of failures must be very considerable. In private practice the results were better known and were encouraging, eighty per cent. being successful, at any rate for several years.

March 27th, BARNARD spoke of the value of the pericardium to the heart. It has been shown that the heart cannot carry on the circulation unaided. The contractions of the muscles of the legs and abdomen are necessary to force the blood into the right auricle. If these muscles all act at the same time a pint or two of blood might be forced into the heart were it not for the fact that the overdistention of the thin-walled auricle is prevented by the fibrous pericardial sac, just as the outer leather cover of the football prevents the overdistention of the thin rubber ball within it. The pericardium limits the possible diastolic distention of the heart by about one-half. When the pericardium is softened in pericarditis, coughing, or moderate exercise will not only fill the heart with blood, but will also stretch the pericardium, which probably never regains its normal size. The right heart then will always dilate, and its valves will become incompetent even with moderate exertion.

MOUILLOT read a paper before the Harveian Society, March 15th, on the modern views of gout in relation to treatment. He believed that the proximate cause of the gouty state lay in a defective metabolism of proteids due to a functional disease of the liver or intestinal glands, and that the deposit of sodium biurate was due to deficient elimination by the kidneys owing to a diseased condition, or through their action being inhibited by an impure condition of the blood. In the differentiation of gout from rheumatism stress was laid on the condition of the fingers, and also on the deposit so often found in the conjunctival surface of the lower eyelid. In speaking of the treatment, Mouillot argued from the action and success of colchicum that the objects aimed at should be to diminish the quantity of uric acid formed, and to stimulate the intestinal glands and liver, whilst endeavoring to remove all the uric acid formed through the excretory organs. Colchicum probably acts by its effect on the liver and intestinal glands, which increases the quantity of bile, thus removing, in the form of glycocholic acid, one of the antecedents of uric acid. Colchicum completely meets the indications in acute gout. Chronic gout and goutiness must be treated mainly by diet and periodic visits to

watering-places. The main points in diet are to drink fluid freely apart from meals, and to make the meals as little complex as possible. Stimulants should never be taken except at meals on account of their effect on the liver.

LUFF urged the importance of avoiding the use of salicylic acid or sodium salicylate in the treatment of gout, since it is not only useless, but in many cases he had found it do positive harm. Many gouty people drink too little. Especially is this the case with female gouty patients, in whom the total amount of daily fluid consumed frequently averages not more than eighteen or twenty ounces. Alkalies and their congeners are useless when administered with the object of dissolving gouty deposits, but he frequently employed alkalies in the treatment of gouty dyspepsia and of gouty affections of the liver.

ARMSTRONG said that, as a general rule, a certain amount of butcher's meat is necessary. In a considerable number of cases on a non-meat diet he had observed that although the actual amount of uric acid formed got less, the rate of excretion diminished to a still greater degree. Beef and mutton certainly stimulate the process of excretion. In nearly one hundred cases of patients dieted exclusively on minced meat and hot water, there was at first an enormous increase in the quantity of uric acid excreted, which, no doubt, the advocates of a non-meat dietary would say was conveyed into the system by the beef; but as the gouty troubles improved, the excretion gradually fell to normal, although the food was unchanged. In giving red meat to the gouty, it is necessary to cut down, as far as possible, the consumption of carbohydrates and of milk, and also to insist upon the drinking of hot water one hour before each meal. Fresh vegetables are of the greatest value, but they should be well cooked. A separate vegetable course at dinner is most useful.

At the Medical Section of the Royal Academy of Medicine in Ireland, February 17th, GRIMSHAW read a paper on the prevalence of tuberculosis in Ireland. He dealt with a period of three years, 1895 to 1898, during which time phthisis caused 11.7 per cent. of all the deaths in that country. The rate in the cities was notably higher than in the country districts.

MCWEENEY called attention to the relative infrequency of tuberculosis among cattle in Ireland. The practice of keeping them on grass for six months each year, may be looked upon as the open-air treatment of tuberculosis applied to the bovine race.

LETTERS said that the most correct test of the tuberculous character of a locality is when the mortality from *tabes mesenterica* and tuberculous meningitis combined bear a high rate to that from phthisis. This high proportion of juvenile to adult tuberculous mortality in Ireland invariably corresponded with a high degree of urbanization.

For Hyperidrosis of the Feet.—

B	Dermatol	.	.	.	.	.	3 v
	Talci	.	.	.	.	.	3 ii
	Amyli	.	.	.	.	.	3 iiss.

M. Sig. Powder feet and inside of stockings.—
Heins.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 20, 1899.

THE President, DR. WILLIAM H. THOMSON, in the Chair.

DISCUSSION ON MALARIA.

(Concluded from page 512.)

The first paper of the evening, entitled

MORPHOLOGY OF THE MALARIAL ORGANISM, ILLUSTRATED BY LANTERN-SLIDES,

was read by DR. JAMES EWING. He showed on three stereopticon-slides sketches of red blood-corpuscles containing malarial parasites of the three forms of malaria generally recognized, the tertian, the quartan, and the estivo-autumnal, in the various stages in which they occur in human blood, and described their phases, and discussed their significance in the life history of the parasite, and the clinical picture of the disease.

The achromatic spot that occurs in all forms of the malarial parasite, and which takes a greenish-tinge with hematoxylin, Dr. Ewing considers to be the nucleus of the protozoon, and always referred to it as such. The ring form of the parasite Dr. Ewing's sketches brought out very clearly. Even when the ameboid movements become noticeable, though the ring may be very thin and difficult to see, with care it can always be demonstrated. As to the significance of the ring appearance he considers it not a mere optical delusion due to the presence of an achromatic vesicular nucleus at this point, but an actual ring enclosing a certain amount of hemoglobin of the red blood-corpuscle. The latest and best authorities seem to be drifting toward this opinion.

In certain very severe forms of tertian malaria, almost malignant in type, importations from Cuba and Mexico, that Dr. Ewing has seen here in New York City, he has observed in a number of instances multiple infection of the red blood-corpuscles. A species of conjugation of the parasite seems to take place in these cases since after a certain stage of its life history is reached never more than one parasite can be found in a red blood-cell, the twin parasites being all young forms. He can scarcely help connecting the observation of this presumed conjugation with the severity of the disease in these cases.

The quartan type of malaria is rare in the neighborhood of New York, and all of Dr. Ewing's specimens were procured from a distance. Arkansas and Missouri furnish characteristic examples of this form of malarial parasite. A marked peculiarity of the effect of infection with the quartan parasite is that the red blood-corpuscles do not swell up as inevitably occurs after infection with the tertian parasite but, on the contrary, shrivel up, becoming markedly smaller even within a few hours of invasion, when the parasite is as yet very small and young. In the young forms the quartan parasite cannot be differentiated with certainty from the tertian type. As it grows older, however, the quartan becomes densely pigmented, and the ring is coarser than in the tertian form. There are intermediate forms where it still remains diffi-

cult to distinguish them even when the life history is pretty well advanced, but they are comparatively rare.

There are perhaps grouped under the estivo-autumnal type of malarial parasite a plurality of species, but the subject has not yet been definitely settled, and workers generally, as yet, assume but one form. The parasite is at first smaller than either the tertian or quartan, and affects the red blood-cell less, causing it neither to swell nor to shrivel. The signet-ring form of the parasite is very characteristic. The ring portion is geometrically fine and regular, perfectly linear in outline. While the ring of the tertian form can be sketched with a brush, that of the estivo-autumnal parasite requires a fine pen for its reproduction. This parasite seldom contains much pigment, and this makes a striking differential sign.

The rosette form, when it reaches the sporulation stage, is also very characteristic, but it cannot always be found in the peripheral blood, though it can usually be demonstrated in smears from the organs, especially the spleen, post-mortem. Dr. Ewing found it a number of times at Montauk last summer in peripheral blood-specimens from living patients, and also in smears made from the organs at autopsy. In his experience there seem to be almost always eighteen spores to the rosette, though it has usually been stated in the literature of the subject that there were less than this—twelve to fourteen. Occasionally nineteen, and once or twice twenty spores, were counted in specimens procured at Montauk. Finally, Dr. Ewing demonstrated varieties of the, as yet, mysterious malarial forms, the crescentic bodies. He does not agree with those who think that they are sterile, as it were, superannuated forms of the malarial parasite, though they may represent a resting stage. They constitute a valuable sign of the age of the infection because of the absence of hemoglobin that they present. Recently, Russian observers have shown that they contain certain chromatin particles that are evidently nuclear in character so that all evidence of life in them is not lacking.

There is a tendency noticeable now among Italian students of malaria to come back to the old idea of only one form of parasite for malaria which is modified by circumstances into the various forms which are now and have been for so long admitted. It may even be that one may change into another under certain conditions. Certain cases observed last summer, among the soldiers at Montauk, by Dr. Ewing, and followed up since, seem to confirm this idea as to the essential unity of the malarial parasite. In one case, in September, blood-examinations showed characteristic parasites of the estivo-autumnal type; in January the blood-picture had changed, and it was very hard to say whether the parasites were of the estivo-autumnal or the tertian type. In March they were frankly of the tertian type. This observation was confirmed by others which were not, however, so complete.

The second paper of the evening, on

MALARIAL NEPHRITIS

was read by DR. H. S. THAYER of Johns Hopkins University, Baltimore, Md. He thinks that the frequency of

the occurrence of nephritis after malaria has been underestimated, and agrees with Rem Picci, who discussed the subject very thoroughly in Rome last year, that malarial nephritis is by no means rare. He agrees also with that observer that it may occur as well with mild as with severe malaria, and that its etiology is the elimination by the kidneys of abnormal tissue-products produced by the irritation of the disease, and the toxins of the malarial parasite.

Dr. Thayer inclines to the view that the incidence of nephritis complicating malaria is even more frequent in this country than pointed out by the Roman observer. Forty-four per cent. of all malarial cases treated at Johns Hopkins Hospital, during the last three or four years, were complicated by albuminuria. Considerably more than one-half of all the patients suffering from the estivo-autumnal type of malaria had albumin in their urine. The negro seemed especially liable to suffer from nephritis during an attack of malaria, proportionately more than three times as many negroes as whites suffering from malarial nephritis.

The course of the nephritis was uniformly favorable, especially when treated by quinin. Patients with relapsing malaria, complicated by nephritis, during the first attack were apt to have relapses of their nephritis with the recurrence of the malaria. Dr. Thayer gave the details of some cases in which malaria finally led up to chronic nephritis. In one case, autopsy in a child showed the large, white kidney, while microscopically, there was considerable interstitial change to be seen. In general, nephritis occurs as frequently after malaria as after diphtheria, so that it deserves careful looking for in all cases of the disease.

The nephritis may only manifest itself after convalescence has become well established, and long after the acute symptoms of the disease have subsided, as happens also with other infectious fevers, notably scarlet fever. In general, it may be said that as sharp an eye should be kept for renal involvement after malaria, as after any of the other infections.

The presence of nephritis does not require any modification of the routine treatment of the malaria. There is an impression abroad that quinin is irritating to the kidneys, and should not be used, or but sparingly in these cases. There is no good warrant in the serious literature of malaria, or in the clinical experience of good authorities on malaria for such an opinion. Especially has it been said and thought that the occurrence of bloody urine formed a positive contraindication to the administration of quinin. This is not true, however, and whenever there are acute symptoms of malaria quinin should be used freely, and will be the very best thing for the patient. Much harm is liable to accrue from the prevalence of opinions opposed to this, so that Dr. Thayer considers it advisable to express himself very explicitly and definitely on the subject.

The third paper of the evening, entitled

SOME OF THE LESS COMMON EFFECTS OF MALARIA
WITH REMARKS UPON THE TREATMENT OF CHRONIC
INFECTION

was read by DR. WM. H. THOMSON. Though malaria was for so long considered, as the name indicates, an air-borne disease, a true miasm we now know that it is not. It is probable that with the passing of this idea goes all notion of a genuine miasma, a true malaria or bad-air disease being discovered. The change of base with regard to the etiology of the disease is no greater, however, than is the development that has come in our ideas as to peculiar clinical symptoms that may be occasioned by it.

Recently Dr. Thomson has had two cases of coma in his service, one each at Bellevue and at Roosevelt, the cause in each case being undoubtedly malaria. It is evident that the parasite of malaria may take the membranes of the brain as a special habitat and that comatose conditions are oftener due to malaria than is thought. In every case of obscure coma, when other ordinary causes of the condition can be eliminated it would be well to think of a possible malarial origin for the condition. A blood examination will decide the interesting question and the therapeutic test will confirm the diagnosis, for, as Dr. Thomson's cases showed, the coma yields promptly to quinin.

Another unusual and interesting symptom is neuralgia. This may take the form of a periodical headache or of intermitting aches and pains almost anywhere in the body. A specific in controlling these attacks of pain is ergot; a dram of the fluid extract by the mouth or rectum rapidly relieves the pain. Quinin is often ineffectual. Curiously enough, however, when quinin and ergot are given together cinchonism is produced much more quickly than when quinin alone is administered. Dr. Thomson has known 12 grains of quinin to produce pronounced cinchonism, where ergot was administered simultaneously, while before double that amount had been used with but very little effect.

Quinin is not as a rule administered with sufficient method and persistency in ordinary cases of malaria or there would be fewer relapses. If there has been even a single paroxysm of malaria, quinin should be prescribed for six weeks. The dose need not be large but if it be kept up there need be no fear of relapses; subsequent attacks will be due to reinfection not recrudescence of the old attack.

A very important desideratum of our knowledge now is to know how long the parasite may live in the human body causing practically no symptoms and yet under special circumstances favoring irrisistance give rise to fresh attacks. Professor Smith of Harvard in talking of Texas fever and its analogy with malaria, at the last meeting of the Academy (see MEDICAL NEWS April 22d), said that the parasite of Texas fever had been known to exist in an animal in a latent stage for five years.

As to the incubation period of the disease, light is gradually being thrown on this much mooted point. A very striking case bearing on this has been reported from Switzerland. Seventeen persons from a little Swiss town where there was no malaria and in none of whom any malarial symptoms had ever been noticed, visited Italy. All of them acquired malaria, the incubation periods being from two weeks to four months. Malaria running what formerly was considered a latent course, should not

be permitted to continue its existence. Blood examinations should be made for nine months after the attack and if malarial organisms are found at any time treatment should be renewed.

With regard to treatment in general, personal susceptibility to quinin plays a considerable rôle in the matter. Last summer there came to Roosevelt Hospital some hundred soldiers, who had suffered from malaria from one to three months, despite the fact that they had received and were receiving 15-90 grains of quinin per day. Even cinchonism had been produced and maintained for some time in many of these cases, yet malarial parasites continued to be found in the blood.

Quinin is the drug for malaria and even such cases as these do not demonstrate its non-specificity for the disease but adjuvants are necessary and a method of treatment that permits the action of the quinin to be most effective. For this Dr. Thomson has found these directions of great practical service: First, a mercurial laxative should be given before the close of the febrile paroxysm. The relief of hepatic congestion and the purgation of the intestines cause the drug to be absorbed sooner and besides removes any quinin in the intestinal tract. This is an advantage since quinin changes into a non-active form if allowed to remain long in the intestines. Second, the quinin should be given one or two hours before the chill in order to have it in the system during the sporulation stage, *i. e.*, when the malarial parasites are especially sensitive to its action. It is usually advisable, because of its irritating properties, to give it in 3 equal doses, the last one or two hours before the chill. Third, spices have long been known to be antiperiodic themselves and to assist the action of quinin, as the popularity of Warburg's tincture in malarial countries shows. Equal parts of powdered ginger in chronic malaria is often of great help. Ginger will sometimes of itself abort malaria even where quinin has failed. Fourth, another adjuvant often of service is the oldest antiperiodic in use, *vis.*, opium. Last summer in the cases of the soldiers at Roosevelt Hospital, the camphorated tincture in half-ounce doses t. i. d. gave immediate relief in combination with quinin. No relapses occurred after its use. Roberts in India pointed out that it is the alkaloid narcotin of the opium that is antiperiodic and that it is better than quinin in certain cases. He also stated that far from producing sleepiness, it stimulates. Its name should be anarcotin; it is distinctly anticomatose.

DR. THAYER, in discussion, said that he agreed with Dr. Ewing that there was not in the crescentic bodies any direct evidence of a capsule. The crescents seemed to him more important, however, than had been set forth. They were intimately connected with the flagellate bodies, and these recent researches, especially those of MacCallum, had shown to be significant for reproduction, very probably being sexual elements. Crescentic bodies might be sterile for their possessor but they could give rise very probably to malaria in others. As to the possibility of the unity of the malarial parasite, Dr. Ewing's suggestions were extremely interesting. They were confirmed by the fact that malarial recrudescences in the springtime were usually tertian in character.

There did not seem to be enough facts, however, as yet to justify any conclusion in this direction and he asked Dr. Ewing if he had observed the transition of one form into the other. As to long periods of incubation Dr. Thayer would rather think of an infection from other patients than accept months of incubation. Infection was comparatively easy if the mosquito-theory were true and all the work on it had been excellently done by trustworthy workers who had mutually confirmed each other's observations.

In reply to Dr. Thayer's question as to the transitional types between the various forms of malaria, Dr. Ewing said that only in the one case given in his remarks had he been able to observe what he considered actual transition between distinct types of the malarial organism. In other cases, however, there had been enough to make him suspect that transition had taken place.

THERAPEUTIC HINTS.

For Trachoma.—Applications of iodine in glycerin or of oil of white vaselin are recommended by NESNANOFF. For instance:

R Iodi pur. parts 1-3
Ol. vaselini alb. parts 100
Etheris q. s.
M. Sig. External use.

The conjunctiva is dried with absorbent cotton, and the iodine then applied, at first in strength of one-half per cent. in glycerin. After a few treatments a one-per-cent. solution in oil of white vaselin can be used. Occasionally it is found necessary to increase to one and one-half or even three or four per cent. Abnormal secretion is quickly checked, and the affection entirely cured by carrying out the iodine treatment.

For Pain in Bones Due to Syphilis.—

R Ext. aconiti gr. x
Pulv. glycyrrhizæ 3 i
Ext. glycyrrhizæ q. s.

M. Ft. pil. No. LX. Sig. One pill morning and evening.—*Devergie.*

Lubricant for Instruments or Fingers.—The mixture given below is stated by KRAUS to be an excellent antiseptic lubricant for sounds, or in making vaginal or rectal examinations. It has the consistence of cold cream, but is quite soluble in water. It can easily be sterilized, and causes no irritation to delicate tissues.

R Tragacanth gr. xl
Glycerini 3 iiss
Aq. carbolicæ (three per cent.) . . . 3 iiii.
M. Triturate in the cold. Sig. External use.

For Lichen Urticatus.—

R Hydrarg. chlor. corros. gr. iii
Chloroformi m. xx
Glycerini 3 ii
Aq. rosæ q. s. ad. 3 viii.

M. Sig. Lotion.—*Goodhart.*